THANK YOU

THANK YOU

THANK YOU

THANK YOU

a plastic awareness

FOREWORD

The following words serve as a compilation of academic research and personal recordings in an effort to provide relevant information on the topic of plastic pollution. I hope to encourage those who are reading to find a workable solution for an ongoing problem we are all facing. I wish to invite positive change through my actions and I hope you will be inspired to do so as well.

“We’re doomed to live with yesterday’s plastic pollution and we are exacerbating the situation with each day of unchanged behavior.”

Rolf Halden, 2010

By: Somya Gupta
2018

THIS PLASTIC LIFE WE LIVE

How does plastic in the ocean affect us on land?

The dark truth:

** Advisory Warning **
The following truth may be too real for the faint of heart. Tough skin and hope recommended.

If you've ever wondered why plastic has become a necessity on this earth, you're in the right place. Please continue reading. For the same reasons that we choose plastic over other materials – its longevity and durability – is the same reason the earth's ocean life is dwindling.

Unfortunately, plastic materials take thousands of years to breakdown and each year, thousands of pounds of plastic materials are being thrown into oceans and landfills. This plastic waste, among other types of waste, is rapidly becoming a life-threatening variable in marine life and our life.

The human food chain has significantly changed because of the unavoidable addition of plastic waste in our oceans and on our land.

Think about it this way: toxins from the plastics are released into the ocean and atmosphere when exposed to heat and/or pressure.
Now imagine thousands of pounds of plastic trash sitting in the hot sun, leaking toxins with each rising degree.

Makes you cringe, right?

These contaminated chemicals are omnipresent in the earth's waters and are being digested by marine life – the same marine life that our seafood industry serves on our plates. In addition to that, large plastics that are not biodegradable break down into micro plastics, which fish and animals mistake as food.

So now, SURFRIDER Foundation has something to say:

WHAT GOES IN THE OCEAN GOES IN YOU.

RECENT STUDIES ESTIMATE THAT FISH OFF THE WEST COAST INGEST OVER 12,000 TONS OF PLASTIC A YEAR. FIND OUT HOW YOU CAN HELP TURN THE TIDE ON PLASTIC POLLUTION AT WWW.SURFRIDER.ORG/RAP

SURFRIDER FOUNDATION

RISE ABOVE PLASTICS

THE BORING, BUT TOTALLY NECESSARY PART

The chemical makeup of plastic takes nearly forever to biodegrade. When plastic is heated or scorched, the (invisible-to-us) chemicals that make up the plastic are released into the ocean and atmosphere. While toxic chemicals are escaping, the hard plastic object is left behind to outlive us all. These toxic chemicals interact with the air we breathe and food we eat, whether it be a microwaved Tupperware lunch or a fresh fish caught in the middle of the Atlantic ocean. I know, it seems highly unlikey that these escaping chemicals have anything to do with us, but overtime, with overexposure, yes it does matter.

Plastic found in the ocean acts like a sponge; they soak up other toxins from outside sources before entering the ocean. Animals are ingesting not only toxic chemicals from the plastic materials, but also a plethora of additional polluted chemicals from burning fossil fuels and gases that have been soaked up by said plastics. Humans are carelessly ingesting contaminated fish and mammals who have been exposed to chemicals we can't even pronounce.

PLASTIC CHEMICAL MAKEUP

Plastic: A polymeric material that has the capability of being molded or shaped usually by the application of heat and pressure.

I. Your common beverage bottle – polyethylene terephthalate (PET)
II. The garden hose in your backyard – poly vinyl chloride (PVC)
III. Your to-go container – foamed polystyrene (or Styrofoam)
    a. As Styrofoam breaks down in the ocean, the polystyrene components are more dense than water so they sink lower in the ocean bed so that the pollutant spreads throughout the sea column making an appearance not just at the surface but also in the depths of the ocean
IV. Shatter proof windows – polymethyl methacrylate (Plexiglas or Perspex)

Polymers are a type of compound with an extremely large molecule size. This is measured by its molecular weight. Molecular weight is equal to the sum of the atomic weights of all the atoms that make up the molecule. Atoms that compose macromolecules or polymers are held together by covalent bonds. They are also held together by weaker electrostatic forces, but because of the large size of the molecule, the electrostatic forces increase in magnitude and become much stronger – this allows polymers to be molded into permanent shapes, i.e. plastics.

BPA & DEHP

Diethylhexyl phthalate (DEHP) is another characteristic found in plastics that acts as a toxic carcinogen. BPA, which is found in majority commercial plastic, is of great concern to human and marine health. Over time the polymer chains of BPA break down and enter the human body in many ways – drinking contaminated water or eating contaminated fish that is exposed to the breakdown of these toxins. BPA can be linked to hormonal dysfunction and birth defects in sea animals and hmans.

So…

Plastic has two major chemicals that are of major concern to humans – BPA and phthalate (DEHP). These two chemicals are part of the defining characteristics of plastic, aka plastic can't be plastic without these properties. BPA comes in the form of plastic storage containers used for food and water bottles. After time, the BPA bond breaks down via repeated washes, heat stress and pressure. The chemicals break down and toxins from the BPA are released from the plastic object. The toxins that are released are linked to cancer, dysfunctions in the neural and digestive systems and overall health for both humans and animals. DEHP is another toxic element found in plastic that breaks down after use. Halden mentions that DEHP is found heavily in medical products. DEHP can make up anywhere from 40-50% of that IV tube that runs those good ol' drugs into your body.

(It's okay to scream to the heavens in disbelief now – I know I am).

** Sorry for the interruption folks, but it is fun (aka disturbing) fact of the day time! **

In January of 2011, the FDA announced a reversal of its 2008 claims regarding the safety of BPA. Their original expression on the safety of BPA was challenged with new studies on the potentially harmful effects of BPA on the brain, behavior and prostate gland of fetuses, infants and children. FDA pledged to collaborate with other federal health agencies to reevaluate the chemicals' safety, but at the time, it was very difficult to find subjects of study and comparison that have not already been exposed to the toxic chemicals of BPA or DEHP.

Not cool man, not cool.

I have to mention this (mostly to save my own ass) because this study aims to remain completely unbiased and transparent: Studying the effects of low-dose exposure proves to be tricky, but also essential for settling the matter of health risks. Evidence suggests that high-dose studies may be inadequate to properly understand toxic effects from continuous low-level exposure.

These chemicals are the cause of toxic plastic pollution in our oceans and on land. Direct elements of plastic such as lead, cadmium and mercury have also been found in various species of fish in the ocean. We are continuously threatening both sea life and human life.

SAY NO TO PLASTICS

SAY NO TO PLASTICS

SAY NO TO PLASTICS

PROBLEM AREAS

The daunting and dangerous GPGP:
The Great Pacific Garbage Patch is an area of ocean that is primarily covered with 1.8 trillion pieces of plastic and miscellaneous trash – large plastics and micro plastics both. This area spans a distance of 1580 miles long and 1320 miles wide; imagine two Texas states side by side – that's how big... and growing. From California to Hawaii and everywhere in between, The Pacific Ocean is suffering from non-biodegradable plastic particles breaking down into micro pieces and accumulating into massive trash islands, whether it be along the coast or in the middle of converging ocean currents. The Indian Ocean and the Atlantic ocean are also experiencing a surplus of trash islands forming.

When you think of plastic waste, you can think of plastic bags, bottles, fishing gear, storage containers, etc.. All of these materials are discarded with an out-of-sight-out-of-mind mentality.

A moment of silence for the coral, the fish, the seals, the turtles and all other sea life.
We apologize.

GHOST GEAR

Lost fishing gear, also known as ghost gear, is a massive contributor to plastic pollution making up at least half of the debris in garbage patches found. There is no formal protocol for used fishing gear in regards to properly discarding of this material so it is not surprising that fishing gear debris is a large factor of ocean trash. Ghost gear hunters – people that dive deep into the ocean in search of lost and sunken fishing gear - are working to prevent the surplus of animal deaths each year via ghost gear. Check out this link for a look into Ghost Gear Hunting.

Waste is being accumulated from mainland areas, boats and ships. Animals that are using inland areas as transportation are also suffering from plastic waste pollution – they are adapting new migrating patterns to escape the polluted waters causing displacement among many different animal species. Consistent environment is very important to marine life and any unusual adjustments can mean death for some marine life species.

RAPIDLY DECOMPOSING PLASTICS

Friend or foe?

Degrading plastics are leaching toxic chemicals such as bisphenol A (BPA) into the ocean. This is understood, but, recent studies found that some plastics break down at cooler temps than expected and at a faster pace than previously proven. These rapidly decomposing plastics are leaving behind chemical toxins in the water that are impossible to remove. Plastic is becoming one of the biggest contributors to chemical pollution in the ocean. These toxic elements found in the ocean are not occurring naturally, but rather forcing the ocean into a state of complete chaos.

We can throw a bunch of numbers out there about how much plastic animals are really eating and at what rate our manmade plastic island is growing in plastic population, but those numbers are increasing every day and if recorded, become invalid within the next few hours.

Until humans can reduce or all together stop producing pounds of non-biodegradable trash per day, the plastic island will continue to spread across oceans and coasts.

Here is some food for thought, or rather some plastic to munch on:

“During a survey in the Antarctic, at least 10 species of organisms were found [floating dead] on plastic marine debris; some had grown to a size that suggests they had been afloat for over a year.”

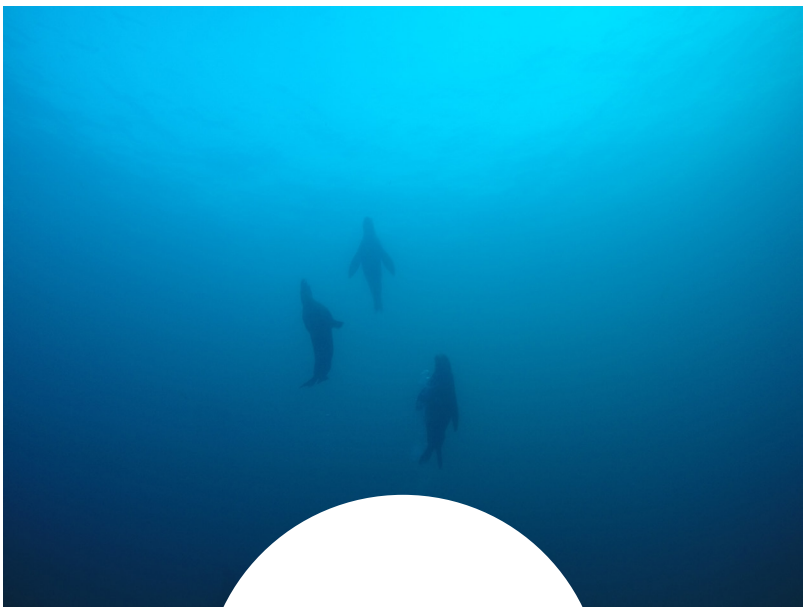
“One study estimates that more than 5 trillion plastic pieces are currently floating in our oceans and seas, weighing over 250,000 tons. This staggering figure is likely a fraction of the true amount, as it doesn’t account for the massive volume of plastic drifting beneath the surface.”

“These [plastic] particles are easily consumed by a range of organisms, polluting marine food webs.”

“One study found micro plastics in the digestive tracts of 80% of seals tested off the coast of Ireland.”

“56% of whale species who involuntarily interacted with marine debris, ghost fishing gear and micro and macro plastics accounted for 69% of the debris they ingested.”

“One recent study identified micro plastics in 25% of marine fish sampled from markets in California, USA and Indonesia.”



THE BEAUTY V. THE UGLY

Not only is the physical plastic debris a problem – plastic bags are being swallowed by fish mistaking them as jellyfish, plastic rings are trapping sea turtles causing a slow and eventual death, plastic bottles are cutting the fins on different fish species – but also the invisible chemical toxins that are being released from plastic materials is becoming even more of an irreversible problem. With water temperatures rising everywhere across the world, heat exposure to plastic is becoming much more prevalent.

TRASH STEW

Leachate: The swampy, stewy rain water that has absorbed all of the toxic chemicals from landfills piled to the brim with plastic waste and other unmentionables…*cringes*.

This leachate can run into streams, groundwater, or can even be absorbed into soil. So now, you might be thinking: WE CAN'T ESCAPE IT! It certainly does feel that way, but there is a way to remove these chemical toxins from our air, and you are that way. By reducing the waste in your day to day and ultimately your lifetime, you will take pounds off of the earth's shoulders.

Mother Nature is quietly thanking you.

Aside from the leachate stew, the physical plastic bottle can find itself in one of five recorded garbage gyres across the world – South Atlantic Gyre, Indian Ocean Gyre, South Pacific Gyre, Western and Eastern Great North Pacific Gyre, North Atlantic Gyre. Majority of plastics are not biodegradable (let's be honest – that 24 hour lasting Dove deodorant bottle isn't going anywhere for the next 600-148087 years) so it is inevitable that these same plastics will eventually just break down into micro plastics. Micro plastics are much harder to clean up and many fish and marine animals mistake the micro plastics for food – which it ain't people.

Coral reef is not only suffering from climate change (that's a whole other study), but also from ocean debris. Ocean debris and plastic waste is also threatening the marine environment by posing a risk to coral reefs. Shallow coral reef habitats are increasingly becoming more fragile under the pressure of ocean debris. There is more broken coral, decreased coral coverage and lower species diversity than ever before in areas where there is copious amounts of accumulated debris. Ghost fishing gear is a huge threat to coral and various other marine life. Turtles, whales, sharks and seals – just to name a few – are animals that are facing major risks from ghost gear; debilitating wounds from being caught in ghost gear traps and nets cause insufferable pain to such animals, which leads to their eventual death either by starvation or impact and like these animals, coral reefs are suffering the same way.

GHOST GEAR IN DETAIL

You may be wondering how fishing gear becomes ghost gear and if you are wondering this, here is some information you might consider reading.

Ghost gear comes in the form of:

• Damaged and/or loss of gear through adverse weather conditions
• Snagging on marine environments
• Gear conflict (incidents where fishing vessels or their gear interact with each other, either accidentally or intentionally, causing damage)
• Abandoned gear at end of life due to lack of net disposal facilities or the high cost of disposal
• Lack of ability to retrieve lost gear
• Abandonment to avoid detection when fishing illegally
• Human error

^that last one seems to be encompassing this entire study, am I right?

Also, something to consider, ghost gear is taking a massive monetary toll on the fishing industry – fish that were meant to populate the catch are facing death due to ghost gear and this is costing the fishing industry millions of dollars (there is a 5-30% decline in fish stocks). BUT, this is not the focus of this study, just something to consider. So, let's keep moving, shall we?

MO MONEY MO PROBLEMS.

WHEN DID FISHING BECOME A SPORT OF SUCH DISRESPECT TO THE WATERS?

THE STEPS WE CAN TAKE AS LOVERS OF THE OCEAN

** THINK TO YOURSELF **

“Today, there’s a complete mismatch between the useful lifespan of the products we consume and their persistence in the environment.”
Unknown, 2010

Real shit.
(Throw away bottles, dental floss, cotton swabs made with plastic PVC sticks – all of these products are used by us within a matter of minutes, yet stick around for millennia and will take many more lifetimes than we can imagine to degrade).

First things first – learn to understand the scope of this problem, only then will you find the desire to take action.

Boyan Slat, CEO and founder of the Ocean Cleanup non-profit organization, says that most of the plastic is still large object, which is good. Micro plastics or broken down plastics are harder to clean up, but large plastic waste is easier to remove.

Also on a bright note: new forms of polymer made from renewable resources that are digestible by microorganisms, are being explored and there is hope that society can begin to make wiser choices to develop more non-toxic chemical building blocks and sustainable products for future generations. We have the power to fix this problem. This is a responsibility not of the ocean, but of humans. We have the power to decrease our reliance on single-use plastic rather than creating more demand for a continuous supply.

If you consider your own personal plastic use and waste, you can begin to make changes in your daily habits to reduce the use of everyday plastics. If this is unavoidable for you, make sure you look into properly discarding of your plastic materials. Take responsibility as your own to protect the environment on land and sea. Break out of this “throw away” culture.

Some alternative options for a reduced waste lifestyle, because no-one likes to be left hanging like that:

AT YOUR DESK Consider bringing your own dishes to your office space – this can include a ceramic plate, bowl, bamboo utensils and reusable stainless steel water bottle/coffee mug. I also noticed that I used way too many paper towels in a day, so I brought my own dish cloth! This significantly reduced my use of paper towels in a day. Dish cloth for the save!
Just take your cloth towel home at the end of the week and bring back a clean one to start all over on Monday. This small change will significantly improve the amount of trash you produce from the hours of 9-5pm. I typically store some "mason jar snacks" in my drawer as well – things like almonds and cranberries or chocolate drops that I buy in bulk from my local Sprouts or any bulk grocery store. You can stay snacking and be eco-friendly all at once! Talking about bulk buying…

IN YOUR HOME SWEET HOME Consider changing up your routine and start buying things in bulk. First and foremost, bring your own reusable containers to the grocery store and hit the self-serve aisles! By buying things in bulk and bringing your own containers to the market, your pantry will stay free of ugly boxed clutter – can't go wrong with that – and you will significantly reduce packaged waste coming out of your house. I use fine mesh bags with a very simple draw string to reduce any extra weight added to my purchase. You can purchase these on Amazon or find them at your local eco store. Something else to consider, bring your own grocery and produce bags. Reusable bags at

checkout save an incredible amount of wasted plastic bags. Produce bags (typically mesh bags for large fruits and cloth bags for produce) are my new best friend!

If there are packaged items you cannot avoid, Terracycle is an example of a recycling program that specializes in properly recycling things like chip bags or even gum wrappers. Check out this link for more information on the Terracycle program.

For the doggies and the kitties and all other land animals, Terracycle also offers programs that recycle your pet's waste too! I am sure if your pet could decide to lead a waste free life, they would. Look into your local pet shop and see if they offer recycling programs via Terracycle or even independently. There is a lot of options out there, it just takes some looking out for.

IN THE HOLY KITCHEN Consider visiting your local eco-store and look into re-usable and biodegradable kitchen tools. Many places will recommend a coconut husk for those hard to remove stains while doing dishes. Also, replace all of your plastic cooking utensils and spatulas with either stainless steel or wooden materials. These tools will last you much longer and avoid any risk of burning plastic in your kitchen.
TJ MAXX kitchen and dish aisle is also my best friend, in case you were wondering.

TWO THUMBS UP FOR REDUCED WASTE!

FOOD WASTE Start saving your food scraps and start composting! There are many different ways to go about home compost solutions, so find a way that works for you! I like to consolodate all of my compost waste for the day in a large bin that I have set aside, equipped with the proper agents for most effective composting. There are a lot of expensive options out there, but with a little digging (no pun intended), you can spend less than $15 dollars on a home compost remedy.

Check out the link in the Fun-and-super-harsh-but super-true-facts of the day column for easy tips on how to store fresh produce and fruits in the fridge without flooding your fridge with plastic bags.

WHETHER IT BE #1 OR #2 reducing waste in the bathroom is easy. Look into a bamboo toothbrush because, little did we know, toothbrushes are some of the hardest things to dispose of. The tiny bristles and plastic grips make it nearly impossible for a toothbrush to break down properly. Consider making a batch of homemade toothpaste in a small mason jar. Baking soda, coconut oil, and mint oil will become your best tools (that's the simple and refreshing recipe for homemade toothpaste). Take your plastic shampoo bottles to a local eco-store and start buying your shower routine in bulk! If that is not feasible for you, consider looking up recycling centers around you that provide recycling services for plastics like shampoo bottles. Handmade soap bars (from farmers' markets, Whole Foods, Sprouts, or a local bath shop) are always a great thing. Bottled castile soap in bulk paired with a biodegradable loofa and you are set for life.

FEMALES ONLY If you are a female, here are some things that may seem really daunting at first, but are totally worth a try. On your next monthly cycle, try using a menstrual cup. I currently use the Diva Cup and although it was quite difficult to get used to, I am now an avid Diva user! There is definitely an up close and personal feel when using a menstrual cup, but you will get used to it eventually. In addition to the cup, look into cotton based liners and pads. There are many sanitary pad brands that make their products out of renewable and biodegradable materials like cotton. Moving on to the hairy side of things: shaving. Consider buying a stainless steel shaver with stainless steel blades that you can reuse. This way, you will spend a lot less money buying plastic cartridges every month and you will cut down on your waste significantly.

SPOILER ALERT

Once you make the very large yet satisfying step towards a reduced waste life, you will soon run into what may see as unavoidable problems, but you have to keep in mind that there is a solution for everything. Spend a little time researching how to best dispose of whatever waste you can't help but make. Look for recycling centers provided throughout your city and home. Learn what can be recycled and what can't be and put in a little bit of effort to stay conscious about the waste you are creating on a day to day basis – I promise, eventually it becomes habit and the less waste you create, the lighter you will feel. Enjoy the journey and stay true to it.

P.S. It helps to keep a log book (make sure to use a recycled paper notebook with stitched binding – none of that metal bound spiral nonsense and a stainless steel pen if possible) of your day to day waste. I section off my day into three columns:
1) Plastic Waste
2) Compost Waste
3) Biodegradable Waste
4) Trash that will remain trash for the rest of eternity (i.e. chips bags, toothpaste tubes, toothbrushes)

Every time I have to recycle something or throw something away, I mark it in my journal. I try to keep my "trash waste" column empty, but occasionally I come across that gift wrap that I have no idea what to do with or those little stickers that come on my fruit from the grocery store. Remember, there is a solution for everything, you just got to [get your ass up and] find it. It is 100% possible to knock out of this throw-away culture that we have become accustomed to – believe me. That is the only reason I am writing this 23 page document, because IT IS possible.

In case I forget to mention, it's possible guys.

On a brighter, brighter note: Environmental programs such as World Animal Protection and Global Ghost Gear Initiative are coming up with innovative ways to recycle the materials that are collected from garbage piles in the ocean, everything from ghost gear to plastic waste. Investments in ghost gear solution projects will encourage a healthier environment for sea life and will benefit the communities that rely on marine life as a source of food and income. (Look into volunteering for various ghost gear and ocean clean-up programs – sometimes time weighs more than money). If you're interested in starting a recycling program in your work space or in your school, you can visit websites like Terracycle or Clean River to find easy-to-reach-solutions for being more friendly to our environment. Get more people involved and make a difference that's worth enjoying.

FUN-AND-SUPER-HARSH-BUT-SUPER-TRUE-FACTS OF THE DAY

1. If you love shellfish, you should listen to this: shellfish lovers are eating up to 11,000 plastic fragments in their seafood each year. Granted, our bodies are magical and ever so forgiving that we do not actually digest majority of these fragments, but our bodies are also not responsible for plastic in our system – the plastic fragments can accumulate over time and contaminate your body in very harmful ways.

2. Check out this link for some cool plastic free media.

3. Did you know…your week-night-too-lazy-to-cook pizza box is actually NOT recyclable. Yeah, I am just as surprised as you. Once cardboard touches food or grease, it becomes un-recyclable.

4. Plastic was accidently created by a Belgian man in 1907.

5. In 2015, it was estimated that 8 million tons of plastic goes into the sea each year and by 2050, there will be more plastic in the ocean than fish (I wish these numbers were lying too).

6. The GPGP between California and Hawaii first started to generate attention in the late 90's when Charles Moore discovered floating trash while sailing the open waters.

7. Micro plastics usually range anywhere between 5mm to 10 nanometers, aka super tiny pieces of plastic that could easily be consumed by little fish that are attracted to its colorful properties and mistake it as food and then we eat that fish that ate the plastic, so really, we are eating plastic because the fish are eating plastic – it only makes sense.

8. In continuation of #7, in 2012, a ship in Hong Kong spilled millions of raw plastic pellets into the ocean after a typhoon caught them off guard and it was never cleaned up.

9. Microbeads are little tiny balls of plastic that can be found in your toothpaste or face scrub – umm ew.

10. Microfibers are rubber debris from vehicle tires.

11. Aside from single use plastic waste being dumped into the ocean, microbeads and microfibers are small pieces of plastic that are too small to be filtered out of our wastewater system, so they find their own way to the ocean and into our food web.

12. When plastic is exposed to radiation or heat, it is called photodegrading – UV exposure eventually breaks down plastic into tiny little pieces, which leach toxic chemicals.

13. Here is a plankton eating micro plastic pieces.

14. Considering all of this crazy and totally depressing information, the seafood industry is still on the rise, increasing at an annual rate of 3.2%. It appears that we rely heavily on seafood as a main source of protein regardless of the fact that the future of marine life is quite questionable and vulnerable.

15. Did you know…plastic in the ocean will outlive us and your kids…and your kids' kids. I can keep going.

16. Typically, only a third or less of our recyclable waste is actually recycled. Although most plastic bottles are 100% recyclable, a lot of companies add plastic sleeves or color, making it harder to dispose of the plastic bottle correctly and reducing the ability to recycle the entire product.

17. Major corporations like Coca-Cola or Pepsi are making efforts to change the design of their product to meet recycling standards.

18. 31% of fish stocks are being overfished.

19. In some areas, illegal unreported and unregulated (IUU) fishing practices catch up to 50% more than legal methods of fishing.

20. Here is a link to some awesome tips on how to store produce in the fridge, plastic free.

21. Here is a link for cool swag bags built just for food!

22. Here is a link to the same thing, but just a little cheaper.

23. Seafood traceability is extremely difficult even for shipments coming from countries considered to be responsibly managing ocean stocks, so IUU activity takes up an estimated 20-32% of the imported seafood business into the USA. That's a lot of undocumented ships carrying undocumented fish, dumping undocumented fishing gear into the ocean.

24. Check out, Panthalassa, an amazing ocean journal for cool stories, videos, and beautiful pictures related to the water. (check them out on Instagram too!)

25. A circular economy: GGGI is the Global Ghost Gear Initiative, which aims to reduce the volume of fishing gear entering the oceans, remove ghost fishing gear and recycle ghost fishing gear in innovative ways while creating sustainable business models and rescuing animals that have encountered dangers by coming into contact with ghost gear. The GGGI hopes to create a circular economy in which they can transform ghost gear back into plastic pellets, local crafts, or other goods in an effort to contribute to local fishing communities that would otherwise have their livelihoods endangered by ghost gear.

26. In 2013, the Healthy Seas collected ghost gear and turned it into clothes, swim wear and carpets. They ventured on a journey from "waste to wear" producing ECONYL® nylon yarn from ghost nets. Healthy Seas has been able to remove 311 tons of abandoned nets. High five Healthy Seas people. Here is a link to their products page.

27. Check out this link for cool ghost gear adventure videos.

28. Aluminum foil, although 100% recyclable, is another indestructible and long-living material we see in our daily lives. You can actually recycle aluminum foil along with your aluminum cans, but must be careful not to cross contaminate clean foil with greasy or spoiled foil.

BE CONSCIOUS, BE RESOURCEFUL

29. Ziploc® brand bags are recyclable! You can recycle Ziploc® bags along with plastic grocery bags and plastic produce bags, but make sure they are clean and dry when you are done with them. Keep in mind, you may need to double check if your curbside recycling program picks up these plastics for you, and if not, find a waste center near you that will!

30. FOR THE LADIES: it's 100% possible to go waste-free even on your monthly cycle! With menstrual cups such as Diva Cup, Lunette Cup and Keeper Cup, you can stay clean and stain-free while maintaining a waste-free lifestyle every month. Check out this link for a helpful review on what it's like to switch over to the menstrual cup.

31. Check out this post for some awesome encouragement.

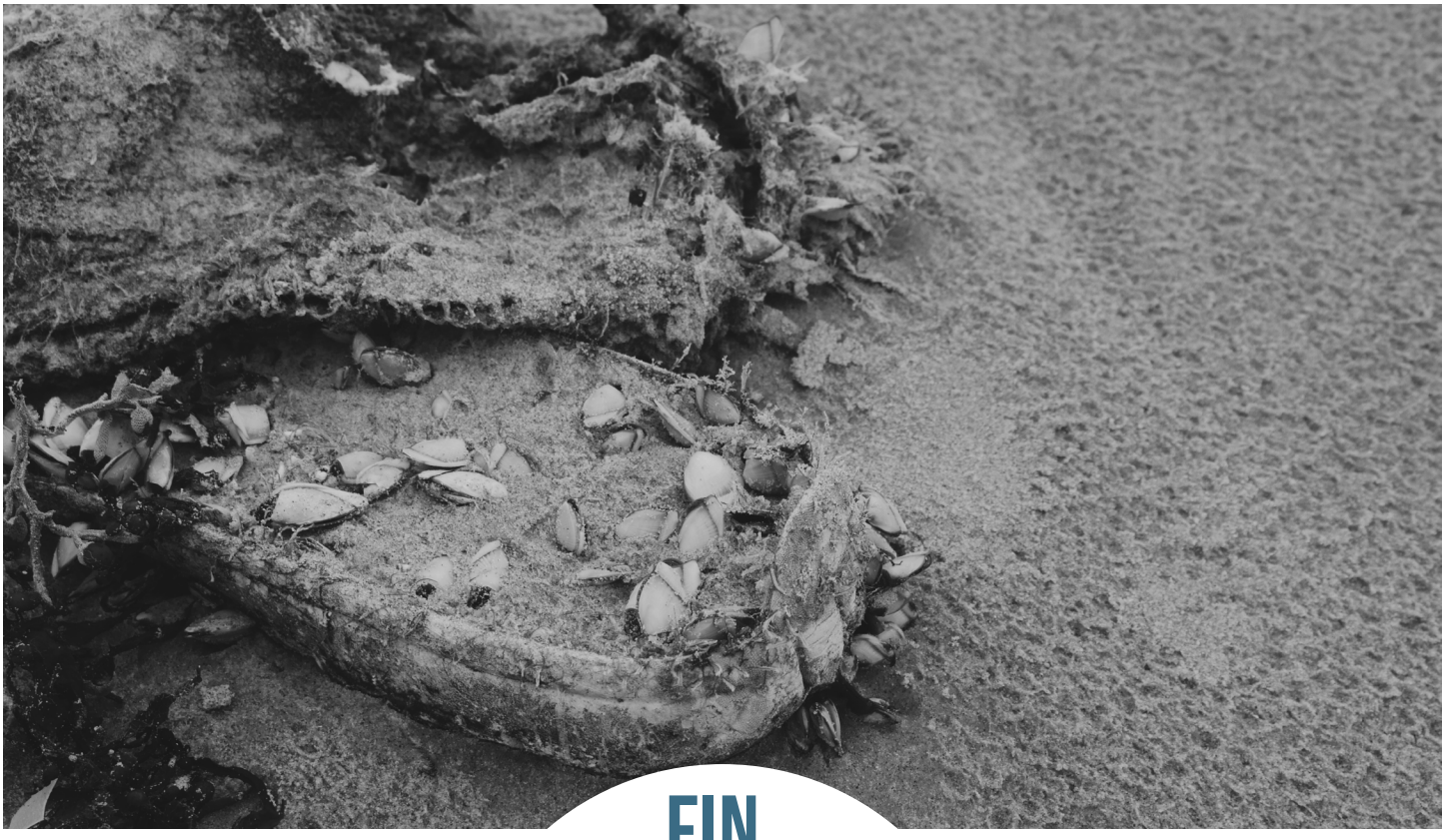
32. Package Free is a great source for those brave hearts that have accustomed themselves to a zero waste lifestyle. Check out this link for all the cool options to help you live a zero waste life.

33. Plastic #1 and #2 are the most commonly recycled plastics. This includes things like water bottles and milk jugs, not plastic bags and utensils.

34. China is no longer playing the role of Global Waste Managers. What does this mean? Read more about it on page 24.

35. When burnt, PVC (a number 3 plastic) forms dioxins, also known as human carcinogens, which have proven to be the most toxic types of chemicals ever tested. Considering this, PVC is still the second most widely used plsatic resin. MIND BLOWING.

"Let's pollute, it doesn't matter, the main thing is to make a buck."
Robert Hunter, 1970



FIN

REDUCE
REUSE
RECYCLE

Often times, your curbside recycling program may give you the illusion that you can recycle anything and everything. I would like to (grudingly) inform you that this is not always the case.

Here are some simple do's & dont's of curbside recycling - please note this information varies per location and program regulations. Always keep in mind that you can research local recycling centers near you that may offer more programs than curbside recycling services.

DO'S

- recycle cardboard, but make sure you break it down and flatten it before you throw it in the recycling bin
- recycle paper (such as newspaper, notebook paper, brown paper) with or without staples or envelopes - the staples are sorted out eventually in the recycling facility
- RINSE all containers that you wish to recycle. the more gunk and residue on the recycled items, the more likely that entire batch of recyclables turns to plain old trash
- seperate all plastics from their lids and research to make sure your curbside facility accepts the plastic lids before you try to recycle them
- make sure to check that you are only recycling plastics labeled under numbers **1,2,4,** or **5** - and remember to always wash your plastics before tossing them
- keep lids on metal cans attached to the can
- do not recycle glass, unless your curbside program accepts glass
- yes, you CAN recycle aluminum foil - just make sure to rinse it clean before you toss it

DON'T

- recycle pizza boxes if the grease has made contact with the cardboard
- recycle wet or soggy paper
- recycle waxed cardboard or wax-lined coffee cups / to-go cups
- recycle plastic shoppig bags but rather find a way to resuse them before you recylce them
- make sure you are not tossing plastics numbered **3,6** or **7** as most recycling facilities do no accept these types of plastics either due to the high cost of recycling or the inability to recycle toxic chemicals
- recyle milk cartons unless your curbside program accepts those materials

Plastic 1: Polyethylene terephthalate (PET or PETE or Polyester)
Considered the most well known plastic in use right now, PET became popular for its durability and strong ability to create a barrier to keep oxygen out of food packaging and to keep the carbon dioxide in in drink packaging. This comes in the form of water bottles, soft drink bottles, juice bottles, mouthwash, salad dressing, peanut butter jars, detergent containers, cleaning supply bottles and microwaveable meal trays. Polyester is also commonly used in clothing and fabric. PET is typically downcycled into materials of lower quality than the original until it can no longer be recycled, eventually ending up in a landfill as waste.

Plastic 2: High density polyethylene (HDPE)
One of the simplest and most basic chemical structures of plastic, HDPE serves as the most common plastic in everday use. Typical use includes plastic grocery bags, water containers, shampoo bottles, garbage bags, yogurt containers, butter tubs and medicine bottles, just to name a few. HDPE is considered one of the safer plastics to use in terms of toxicity, but, nonetheless, it can leach the endocrine disruptor, nonylphenol, when exposed to heat or sunlight. (This exposure to NP may lead to thyroid disfunctions among many other hormonal dysfunctions).

Plastic 3: Polyvinyl chloride (Vinyl, V or PVC)
PVC has decreased in use and manufacturing because of its serious health and evironmental pollution issues. The entire life cycle of PVC or Vinyl is considered toxic from manufacturing to disposal, however PVC is still considered the second most widely used plastic resin. Typical PVC comes in the form of toys, cling wrap, clear food containers, credit cards, piping, fencing, squeeze bottles, loose-leaf binders, pleather, cooking oil and peanut butter jars, blood bags and medical tubing...woah. PVC may contain and/or leach BPA, lead, mercury, cadmium and dioxins just to name a few. Read more about the crazy risks of using and manufacturing PVC here.
https://www.lifewithoutplastic.com/store/common_plastics_no_1_to_no_7#.Wy0gFxJKiRs

Plastic 4: Low density polyethylene (LDPE)
Another popular and basic structured plastic in use, LDPE polymers are less dense and less crystalline resulting in a more flexible form, making it very easy to process. LDPE can be found in the form of dry cleaning bags, frozen food bags, plastic wraps, coating for milk cartons, food storage containers and wire and cable covering. As many of the other plastics listed here, LDPE can leach the endocrine disruptor nonylphenol when exposed to heat and sunlight. With a low recycling rate, LDPE is typically recycled into compost bins and plastic lumber.

Plastic 5: Polypropylene (PP)
Similar to plastics 1, 2 and 4, PP is typically used for hot food storage because of its ability to resist heat better. PP is typically found in the form of food containers, medicine containers, straws, bottle caps, Britta filters, baby bottles, sanitary pads/diapers and car parts such as bumpers, carpets and fixtures. PP has a low recycling rate to due additional pigmentation, which makes it more difficult to sort in the recycling process.

PLASTIC IN DETAIL

Plastic 6: Polystyrene (PS)
PS, or more commonly known as Styrofoam, is essentially foamed PS that has been filled with air. PS requires a carcinogen known as benzene to form properly. PS can also be made into clear, glassy hard polymer materials used for things like CD cases. PS usually comes in the form of styrofoam take home containers, egg cartons, deli food packaging, razors, hangers, test tubes and petri dishes. PS can leach styrene, which is a human carcinogen considered to be a toxin to brain and nervous systems when exposed to heat (like hot foods).

Plastic 7: Other (O) - all other plastics
This can include layered plastics or mixtures of various types of plastics. Typically, if you see a container with #7 and PC below it, it means that the make up of that container includes PC (polycarbonate) along with other plastics not listed. There have been many health risks recorded to plastic #7's and have reduced in use and manufacturing since. PC has been linked to BPA and was most commonly used for its strength and transparency. Baby bottles, sippy cups, water bottles, metal food can liners, DVD's, phones and computers are the most common PC #7 products.

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CHINA:
ONCE A DUMPING GROUND, NOW A SLAP IN THE FACE

China, for the longest time, willingly served as the world's dumping ground. They imported the world's waste and dominated as the leading resource in waste management. For many decades, China sorted endless heaps of trash at plastic recycling mills and repurposed the waste into various recycled plastic products and even re-sold repurposed plastic pellets to other countries for their own use in plastic manufacturing. China provided a system in which single use plastic could live another life for as long as they accepted waste across their borders.

What was once a profitable business for China, is now one of the major contributors to China's rapidly growing waste pollution problem. Fed up with trah piling up and contaminated sources entering their cities, Beijing said, "no more," and banned the import of most plastic waste from other countries.

So what happens now?

One could argue that this is a good thing; a sort of wake-up-call to other countries to take notice of their copious amounts of plastic waste being created. But with an effective ban on imported waste from other countries, one could also ask what is happening with all the trash traveling across borders in the mean time?

I call it the pile-up-of-the-century.

With China no longer accepting other people's waste, there is now a superfluity of trash sitting idle. Most of this trash can either be buried in landfills, burnt, or left abandoned. But what good does that do for the environment. No good, let me tell you.

There is now a global pressure that has fallen on countries that once used China as a dumping ground, to realize and face our addiction and reliance on plastic goods. There is a pressure on plastic manufacturers to find more environmental alternatives to their products. There is a pressure on us, as the people of a nation, to remove ourselves from this out-of-sight-out-of-mind mentality that is crippling our natural life.

China continues to import trash from certain countries under (incredibly) strict regulations, but it is time to wake up and take responsibility for our own incessant waste problems. Change starts with change.

CLOSING NOTE

I hope the above words have value and impact to you, the reader. I wish to convey my passion in protecting our waters and all of the life beneath the surface through this study. There is plenty of information to be read or heard, but action needs to take place today - action from you and me.

Take it day by day, week by week, moth by month. Change can be slow or change can be fast. There is no right or wrong. Stay true to your reasoning and you will respect the value in what you do. This is something bigger than us, and getting bigger because of us – we are the problem and we are the solution. Let's keep moving and initiate change, together!

I wish you happiness and good fortune in all your ventures to come. Please reach out to me whether it be an open dialogue about these words or even just to say hey, hello, hi!

Best,
Somya Gupta

P.S. I would like to send a great applause to all that have committed themselves to protecting our oceans and land in their everyday habits and a thank you to all those who have inspired this passion in me.

THANK YOU FOR READING AND TOGETHER, WE CAN KEEP THE DEEP BLUES, EVEN BLUER.

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