

# Plastics

Julianna Vazquez



# What is plastic?

Plastic is made up of natural resources such as coal, natural gas, salt and crude oil.

We use more than we realize

- Plastic bottles/packaging
- Single-use bags
- Straws
- Etc...

America is one of the biggest producers of plastic waste in the world

# Where does plastic come from?

China is the second largest producer of plastics in the world

- Made up about 30% of plastics exported globally
- Imports from China to US have increased over the years

Other large producers/exporters include:

- Canada
- Germany
- Mexico
- Saudi Arabia\* (SABIC)

We produce a lot of plastic here in America, but a large amount is still imported from other countries. According to the [World Integrated Trade Solution](#) website:

1. China exports ~\$25 mil
2. Canada ~\$14.5 mil
3. Mexico ~\$8.5 mil
4. Japan ~\$4.7 mil
5. Germany ~\$4.7 mil



# Who uses plastic?

Companies like Coca-Cola, Pepsi and Nestle are large consumers of plastic products.

- Coca-Cola and Pepsi (American-owned) products produce the most plastic waste
- Coca-Cola shifted from glass packaging to plastic, Nestle sells single-use products
- Most brands use plastic packaging for food items to packaging for household goods

Only ~8% of these plastic products are recycled



# HOW PLASTIC IS MADE

the creation of a crisis



**Step 1: Drill or frack for oil**



oil drilling

**Step 2: Transport crude oil to a refinery**



transport

**Step 3: Separate crude oil into liquids and gasses**



distillation

**Step 4: Create different plastics by manipulating the polymers and building chains**



**Step 5: Sit back and let manufacturers produce plastic, unchecked.**

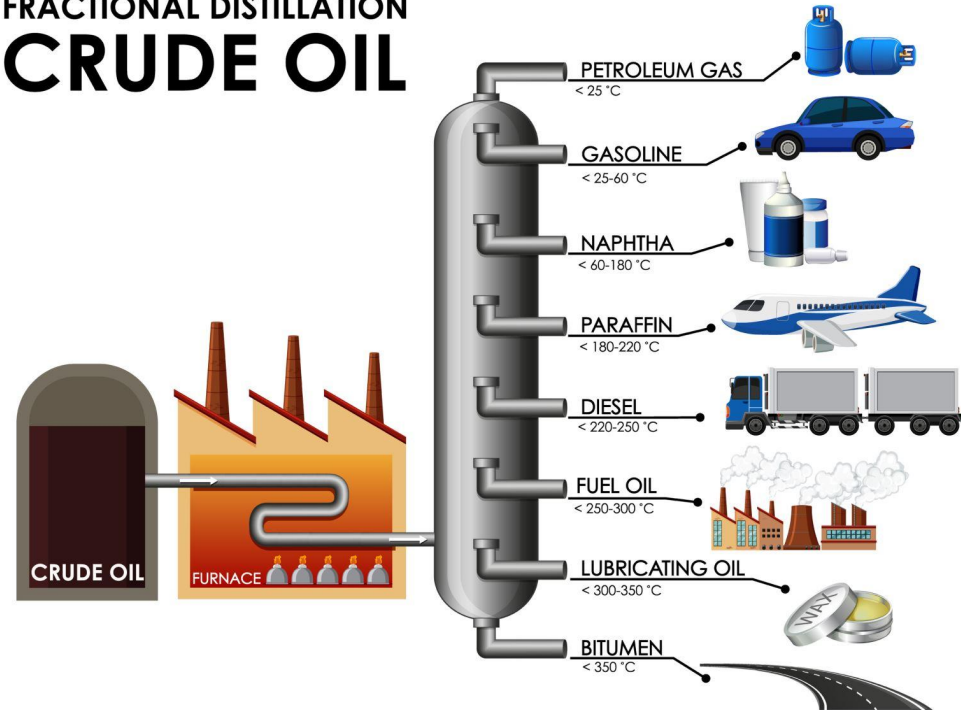


oceans & landfills

# How is Plastic Made?

- Plastic starts as organic materials; varies between coal, natural gas, plants, crude oil and more
- Heated and refined into chemicals, then distilled and separated into different compounds (Naphtha)
- Polymers combine together to create plastic in any form. Molds are used to create plastic bottles.

## FRACTIONAL DISTILLATION CRUDE OIL



# Impacts of Plastic Production

- Pollution is generated when producing plastic, air-emissions release toxic waste into the air
  - “Producing a 16 oz. PET bottle generates more than 100 times the toxic emissions to air and water than making the same size bottle out of glass.”
- Production is harmful to workers as well; explosions, toxic vapor, chemical spills, and chemical fires have led to worker deaths
  - “...nearly 1,600 (16%) of industrial accidents were associated with producing plastics or plastic constituents.”
- People are exposed to the chemicals in plastic products not only during production, but also when plastic products are used.
- Oil drilling leads to devastation of the environment and the land, wildlife, pollutes the air and contributes to climate change.

# Plastic Pollution



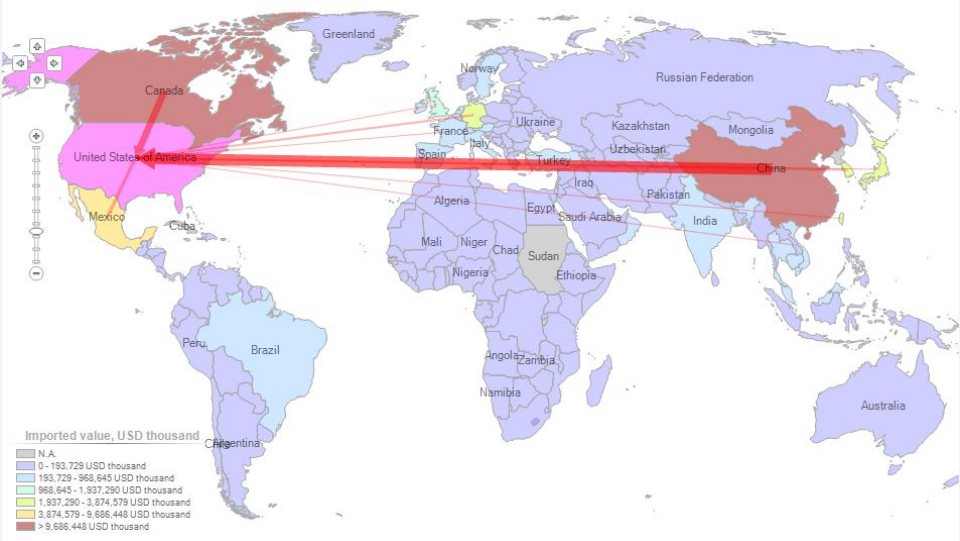
The biggest issue with plastic products is the pollution caused after the products use.

- According to [Plastic Oceans](#), we produce over 380 million tons of plastic each year, and more than 10 million tons of that gets dumped into our oceans.
  - Plastic waste is ingested by ocean life, poisoning them. Plastic waste kills 1 million marine animals each year. (Oil spills also kill marine life, and oil is needed to produce plastic)
- Plastic waste buried in landfills causes toxic chemicals to contaminate groundwater.
- Non-biodegradable, sticks around in landfills for ages.



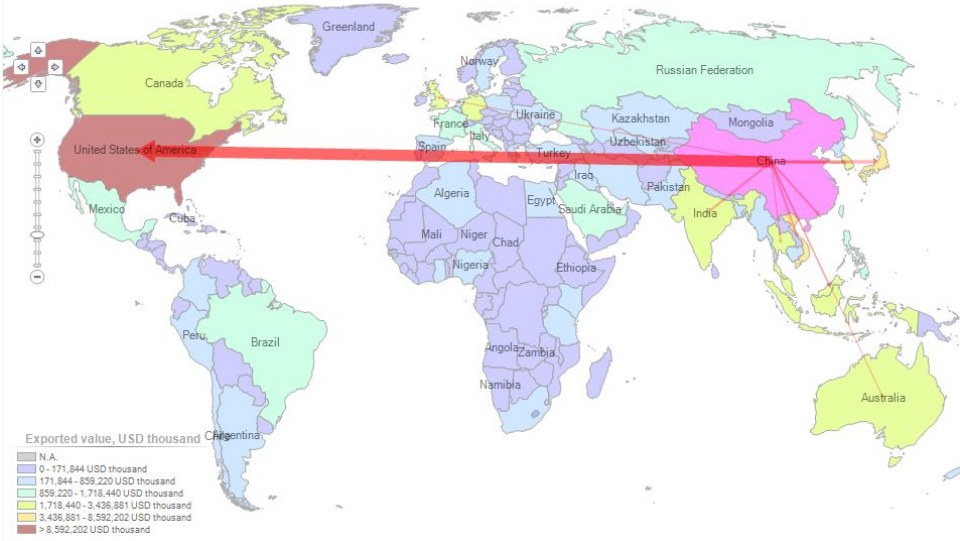
# Imports to the United States

List of supplying markets for a product imported by United States of America in 2019  
 Product : 39 Plastics and articles thereof



# Exports out of China

List of importing markets for a product exported by China in 2019  
 Product : 39 Plastics and articles thereof



# MAPPING THE FLOW OF WORLD'S PLASTIC WASTE



Source: Visual Capitalist

China had a large market in plastic waste.

In 2017, China implemented a ban on plastic waste being imported, disturbing the flow.

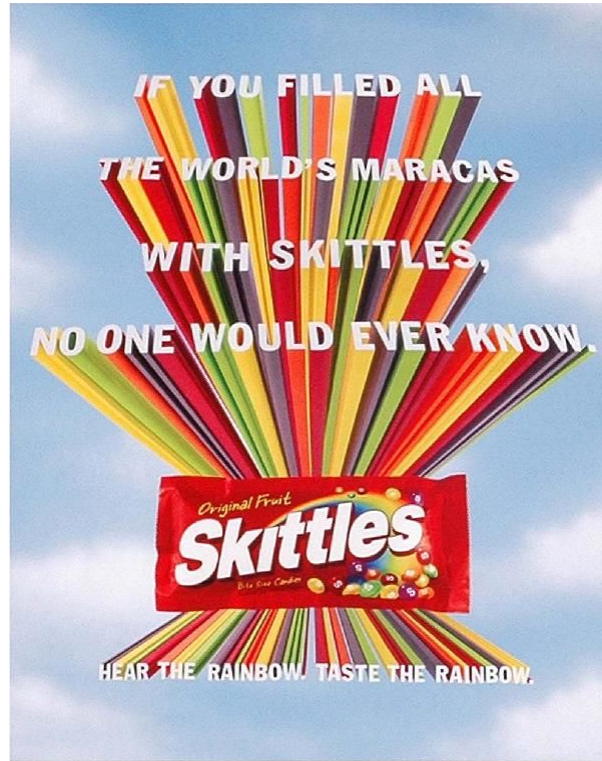
China and other countries are now beginning to ban plastic products.

# What is Being Done?

- According to [National Geographic](#), many countries like Canada, Peru, and even some states in the U.S. are banning or limiting single use plastics
- People are promoting the use of reusable/biodegradable straws (metal, bamboo, paper); “Save the Turtles” movements popularity in 2018
- [#BreakFreeFromPlastics](#) is an organization founded in 2016 who demands reduction of single use plastics and seeks solutions for the plastic pollution crisis; over 11k individuals and corporations following
- [Plastic Free July](#) provides tips on how you can reduce your plastic waste, inspiring around 326 million people in 177 countries to make a change

# Advertising

- Necessities come in plastic packaging (water, food, cleaning products)
- Advertisements for plastic containers, bright commercials for candies and bottled drinks
- Never focuses on the fact that the product is/uses plastic



# Fetishism

- Production of plastic is never talked about
- Searching for information on plastic production only shows results for plastic waste
- Very difficult to buy something without purchasing plastic
- We consume foods packaged in plastic, which is made with toxic chemicals, without thinking much about it

# Taking Action

Making a change in such a large industry can be a challenge. Aside from educating ourselves on the threat plastic poses, what else can we do?

- Start small. Recycle, use reusable straws, cups, utensils, shopping bags, reuse bottles and other household items. Encourage others to do the same.
- Join protests and donate to organizations.
- Vote for political leaders who acknowledge the pollution problem and work to relieve it.
- Buy from smaller businesses who produce products in biodegradable packaging.



< Photo

PLASTIC FREE JULY

Get involved What others do Resources Donate Take the challenge

Join millions of people reducing their plastic waste.

Plastic Free July® is a global movement that helps millions of people be part of the solution to plastic pollution - so we can have cleaner streets, oceans, and beautiful communities. Will you be part of Plastic Free July by choosing to refuse single-use plastics?

Yes! I will take the challenge! >

♥ 🔍 📌

July is coming up, and so is a great opportunity to play your part in reducing plastic waste. You can go to Plastic Free July's website, you can read up on a ton of different ways to reduce your own plastic waste and make a change in our environment. Plastic waste kills over 1 million marine animals alone every year, and that's not even touching the toll it's taking on our land wildlife. Be part of the change! ♥

<https://www.plasticfreejuly.org>

1 minute ago

🏠 🔍 📺 📁 🌐

# Sources

- <https://www.earthday.org/fact-sheet-how-much-disposable-plastic-we-use/>
- [https://wits.worldbank.org/CountryProfile/en/Country/USA/Year/LTST/TradeFlow/Import/Partner/by-country/Product/39-40 PlastiRub](https://wits.worldbank.org/CountryProfile/en/Country/USA/Year/LTST/TradeFlow/Import/Partner/by-country/Product/39-40%20PlastiRub)
- <https://dolphinplastics.com.au/blog/plastic-manufacturing-country-fun-facts/>
- <https://polymerdatabase.com/Polymer%20Brands/Plastic%20Manufacturers.html>
- <https://www.rte.ie/news/newslens/2019/1023/1085207-plastic/>
- <https://www.bpf.co.uk/plastipedia/how-is-plastic-made.aspx>
- <https://ecologycenter.org/plastics/ptf/report3/#:~:text=Producing%20plastics%20can%20be%20hazardous,evacuations%20and%20major%20property%20damage.>
- [https://www.wilderness.org/articles/blog/7-ways-oil-and-gas-drilling-bad-environment#:~:text=3.,water%20pollution%20hurt%20local%20communities&text=The%20health%20risks%20from%20oil,birth%20defects%20and%20liver%20damag e.](https://www.wilderness.org/articles/blog/7-ways-oil-and-gas-drilling-bad-environment#:~:text=3.,water%20pollution%20hurt%20local%20communities&text=The%20health%20risks%20from%20oil,birth%20defects%20and%20liver%20damage.)
- <https://plasticoceans.org/the-facts/>
- [https://www.trademap.org/Country\\_SelProductCountry\\_TS\\_Map.aspx?nvpm=1%7c156%7c%7c%7c39%7c%7c%7c2%7c1%7c1%7c2%7c2%7c1%7c2%7c1%7c1%7c3](https://www.trademap.org/Country_SelProductCountry_TS_Map.aspx?nvpm=1%7c156%7c%7c%7c39%7c%7c%7c2%7c1%7c1%7c2%7c2%7c1%7c2%7c1%7c1%7c3)
- <https://e360.yale.edu/features/piling-up-how-chinas-ban-on-importing-waste-has-stalled-global-recycling>
-