Plastic Free Crouch End

Affiliated to Surfers Against Sewage's 'Plastic Free Communities'

What's the problem with plastic?

Impact on marine life and the unknown impact of microplastic pollution on all organisms – may affect CO_2 absoption by oceans

Nearly all plastic that was ever made still exists in some shape or form (apart from the fraction that's been burned) ; unless we act, plastic pollution will outweigh fish by 2050.

The rich countries that consume the most per capita plastic try to dump their waste on countries least able to deal with it.

Destruction of ocean life tends to have the worst impact on poor communities totally dependent on fish for their food and livelihoods

Swapping plastic for other materials

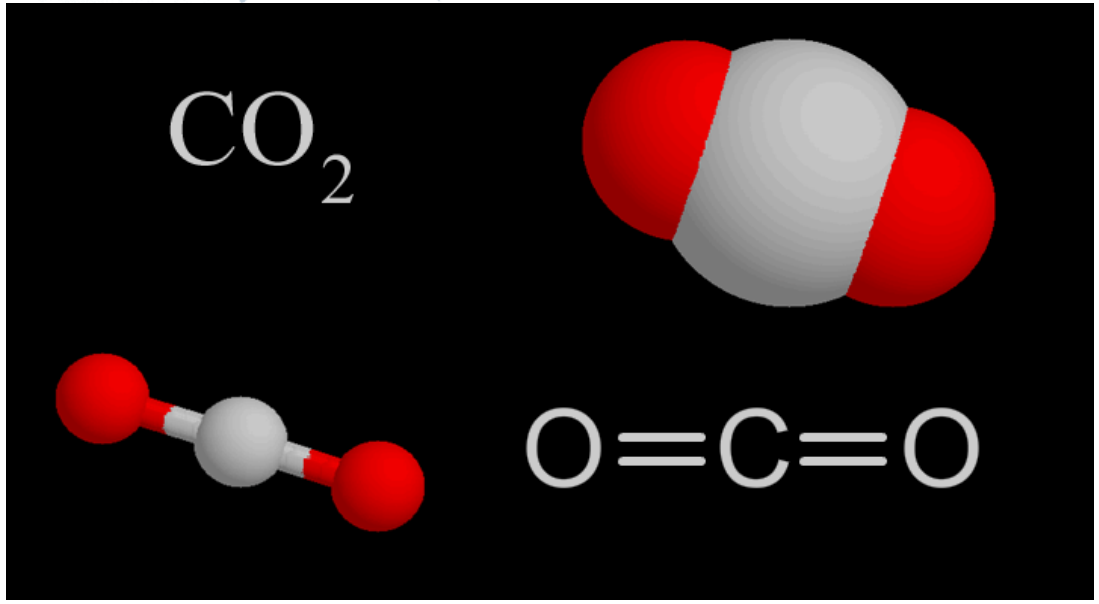
The total amount of plastic produced has had a huge carbon footprint. Plastic production is an increasing driver of oil production. It's been estimated that by 2050 plastic will be responsible for up to 13% of all carbon emissions [7]

But! Compared to other materials plastic has a low carbon footprint.

Plastic stays in the environment – but SO DOES CARBON DIOXIDE which contributes to global warming

Assessing environmental impact is done via life cycle analysis; need to consider global warming potential, pollution of rivers with algae, water use, acid rain, resource depletion, toxicity on humans, toxicity on freshwater plants and creatures, marine life, land ecology and production of smog - from cradle to grave.

Plastic or global warming?



The plastic issue is easier to visualize and understand, however, the two must be considered together

Biodegradable/compostable plastics

There is no ‘marine’ standard for ‘biodegradable’. Most need a specialist collection and industrial conditions to break down. Even if they are home compostable, they may not be accepted by your local food waste collection.

“Biomass-based biopolymers such as PLA, PHA and TPS show great potential, especially for packaging and other single use, provided they are used in closed loop-systems. **Their promotion as a greener alternative is unjustified in the absence of the effective provision of industrial composting or anaerobic digestion facilities**; i.e. they are not suitable for dispensing ‘fast food’ in uncontrolled public spaces. The increasing use of PLA, PHA and TPS and similar biopolymers **will not reduce per se the amount of plastic waste reaching the ocean** or ending up in landfill. In addition, there is a risk that such polymers will contaminate recycling waste streams” (2017) UNEP

Plastic alternatives may worsen marine pollution, MPs warn

Committee says UK should reduce use of plastics rather than replace it with other materials

▲ Plastic rubbish floating in the ocean. MPs were told that a biodegradable cup could pose as much of a problem to marine life as a conventional plastic cup. Photograph: Paulo Oliveira/Alamy Stock Photo

Paper is high impact

“Paper requires over three times the energy to make a bag equivalent to a plastic bag – even at 100% recycling. The energy is most likely to come from fossil fuels. Even lightweight recycled paper bags take more energy to make than a plastic bag. Paper bags can be reused far fewer times than plastic bags. They often break and more are needed. “ *How Bad Are Bananas?: The Carbon Footprint of Everything* Mike Berners Lee

There are varying figures on this but the bottom line is very consistent. The toxicity of paper production to waterways is significant in addition to the energy considerations. Recycling paper has emissions from transport and the recycling process.

Aluminium – cans and foil

- Unlike plastic, aluminium can be recycled in a closed loop; it can be made into new products with no loss of quality.
- Rates of aluminium recycling are higher than glass and plastic and the average can is made of 73% recycled material.
- Recycled aluminium has a lower footprint than a ‘virgin’ PET plastic bottle! So go for water in a can over a bottle. New aluminium has a huge footprint. [5]
- Kitchen foil must be clean to be recycled!!

	50 litres in PET bottles (100 x 500ml bottles) 	50 litres in Al cans (150 x 330ml cans) 
Embodied energy, using new material (kWh)	58	175
Recycling energy, using old containers (kWh)	24	16
CO_2 footprint, using new material (kg CO_2)	5.8	36
CO_2 footprint, recycling old containers (kg CO_2)	2.4	3.3

Swap or Not? ***A climate-first guide to what 'plastic-free' swaps are 'worth it' for the environment – Out and About***

Avoiding plastic while avoiding an increase in carbon dioxide emissions is not straightforward. Climate change is a greater existential threat. This guide aims to collate available information to help people decides which plastic swaps are better for the environment overall. Background notes are at the end.

Item	Pros	Cons	Overall?
Cutlery and tableware inc cups and bottles – the 'standard' is single use polypropylene cutlery or paper cups lined with plastic which need specialise recycling.			
Wooden cutlery  Image 1	Wood is biodegradable and compostable. Can be produced with low impact eg. Aspenware is produced with hydroelectric energy[1].	Slightly more expensive than single use plastic cutlery.	Good swap if take out option is needed.
Bamboo/Melamine tableware  Image 2	Can be used for 4 years	Often as some plastic in the construction to bind the structure. This makes it harder to dispose of so will end up in landfill. There is significant water usage in washing cups, so again these must be reused sufficiently to break even (estimates vary but 20-100 uses!).	Good swap – compared to single paper board cups and compostable cups the impact is much lower. On 'light' usage of 250 coffees/year, the climate change impact is about 4x lower[2]

What to do?

Reduce!

From both a carbon footprint and plastic pollution point of view, avoid single use items of all types where possible

Re-use

Find a use for any single use items you do acquire e.g. take away pots – but be aware that plastic degrades over time.

Recycle

Currently only around 9% of plastic is recycled.

But…!

Prioritise recycled over recyclable materials

Plastic does not work as a closed loop – the next round made is of lower quality.

Specific Ideas for individuals

Reusable cups, bags, cutlery & boxes for out and about

Veg boxes e.g. Riverford, Crop Drop, etc or use a 'Refill' store

Invest in a guppyfriend/Cora ball to reduce microplastics

Choose take aways that will allow you to use own containers or have a reusable scheme

Avoid new buying synthetic clothes to reduce microplastic shedding

Aim to avoid single use rather than swapping for alternative single use items

Lobby your councillors/MP

Join a community group focusing on plastic

What is PFCE doing? Community level

We've signed up businesses and other local organisations and awarded plaques.

We've developed increasing social media capacity to expand our reach and share ideas

We organised a Mass Unwrap event outside Waitrose where the Coleridge pupils were the highlight.

We've drafted an events poicy to be shared with schools

We've worked with Haringey Councillors and officers including around their Plastic Free Action Plan

We've set up a petition about water fountains in Haringey

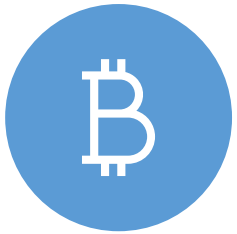
We are working with NLWA on their Low Plastic Zones initiative

5 Take Away Actions from PFCE

AIM TO AVOID SINGLE USE RATHER THAN CHOOSING ALTERNATIVE SINGLE USE ITEMS

CARRY A REUSABLE CUP, BAG, CUTLERY & BOXES WHEN OUT AND ABOUT

TRY A VEG BOX E.G. RIVERFORD, CROP DROP, TO REDUCE PACKAGING



AVOID NEW BUYING SYNTHETIC CLOTHES TO REDUCE MICROPLASTIC SHEDDING (INVEST IN A GUPPYFRIEND/CORA BALL TO REDUCE MICROPLASTICS FROM THOSE YOU HAVE)

ENCOURAGE YOUR LOCAL SHOPS/BUSINESSES SCHOOLS TO MAKE IMPROVEMENTS

References

1. The Danish Environmental Protection Agency (2018) Life Cycle Assessment of Grocery Carrier Bags project number 1985.
2. Exploring the potential for adopting alternative materials to reduce marine plastic litter (2017) UNEP Environment Agency Life Cycle
3. Assessment of supermarket carrier bags in 2006. Report SC030148. Environment Agency, Bristol, 120pp.
4. *How Bad Are Bananas?: The Carbon Footprint of Everything* Mike Berners Lee
5. http://www-materials.eng.cam.ac.uk/energyforschools/downloads/D-PackagingRecycling.pdf aluminium v plastic
6. https://www.theguardian.com/environment/2019/sep/12/plastic-alternatives-may-worsen-marine-pollution-mps-warn
7. https://www.theguardian.com/business/2016/jan/19/more-plastic-than-fish-in-the-sea-by-2050-warns-ellen-macarthur
8. https://www.ciel.org/wp-content/uploads/2019/05/Plastic-and-Climate-Executive-Summary-2019.pdf

Recycling Energy Use

- For example, for plastic (which is assumed to be recycled abroad) recycling transport emissions accounts for about 2% of overall life cycle emissions. For paper, transport for recycling (including transport abroad for 50% of collected paper waste) account for 3% of overall emissions. For glass, often recycled in Scotland, recycling transport impacts make up less than 1% of emissions.

- https://www.zerowastescotland.org.uk/sites/default/files/Carbon%20impacts%20of%20recycling%20and%20transport.pdf