

# Designing to Protect Soil and Watercourses

Avoiding Persistent Pollution Arising From Poor Disposal



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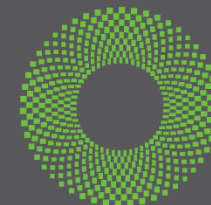
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# Why is This Important?

Three things are needed for human life:

- Sun
- Soil
- Water

In order to protect the latter two, we need to consider where items and packaging are likely to end up, not just where we would like them to go.



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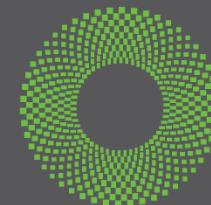
# Why is This Important?

As well as obviously being just plain wrong, there is now evidence that plastic pollution in soil reduces crop yield, so we are busy destroying the source of our food.

<https://www.fao.org/3/cb7856en/cb7856en.pdf>

<http://www.world-agriculture.net/article/plastic-film-mulch-in-chinese-agriculture-importance-and-problems>

<https://www.sciencedirect.com/science/article/abs/pii/S0048969718335472>

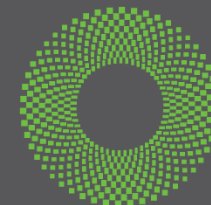


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# Disposal Routes

- Correct disposal routes are available for everything in the UK. Perhaps not always the route you want or when you want it.
- However, human behaviour is not always perfect.
- As we will see in some of the following examples, labelling doesn't always help, even if it is clear.
- Even if the correct disposal route is available, some people will choose the incorrect route. This is even at the risk of an expensive drain blockage.

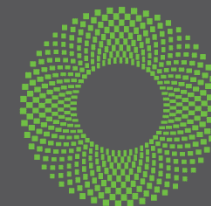


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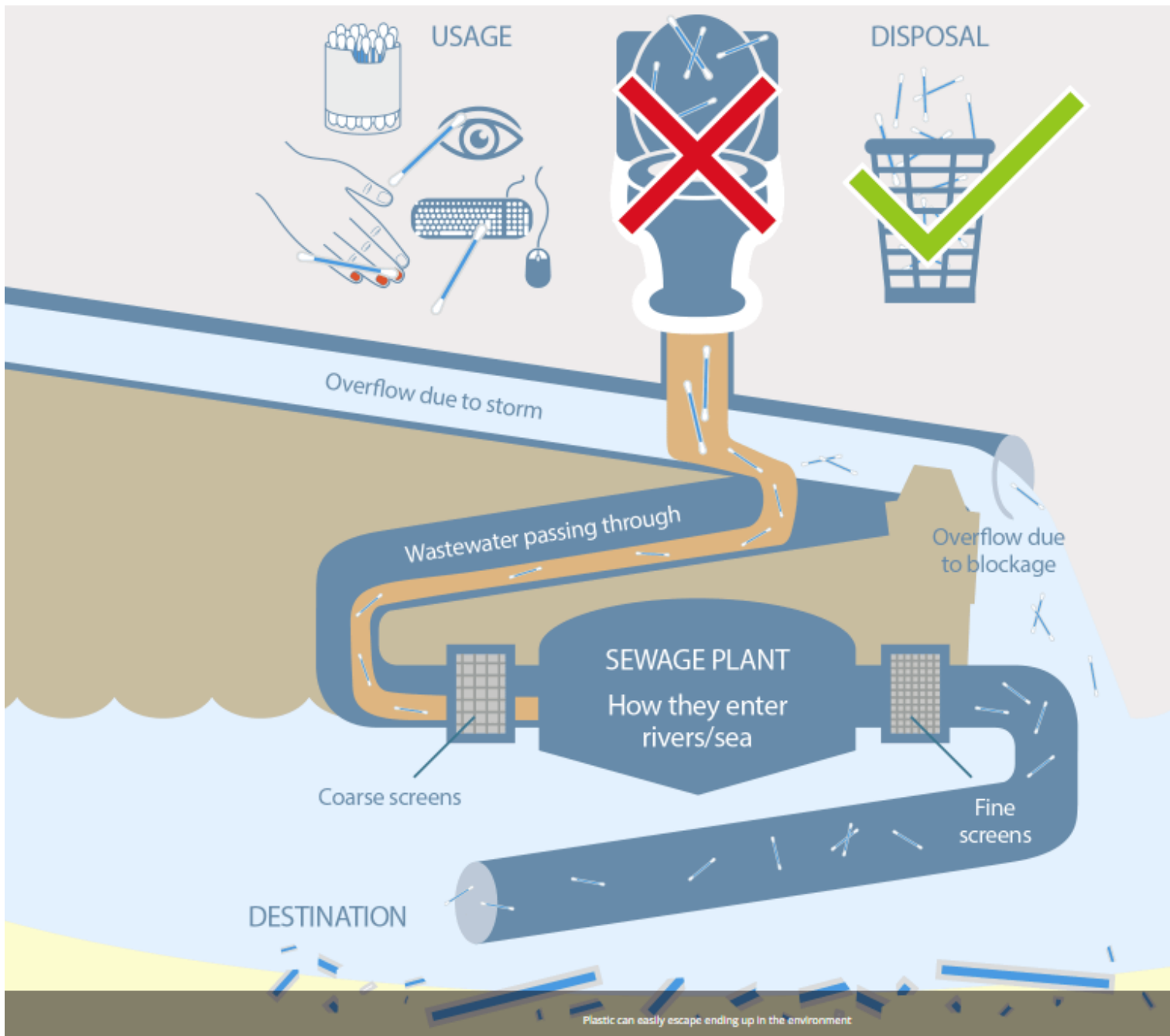
# Cotton buds

- Cotton buds are generally labelled with a “Bag and bin” logo and a “Do not Flush” logo.
- Despite this, cotton buds are very commonly flushed.



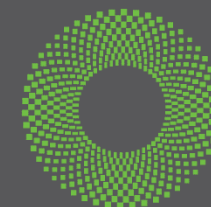
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# Cotton buds

- Making the stems out of rolled paper means that if they are flushed, even though they will still be litter, at least they won't persist.
- Co-op changed to paper stems in 2006, 13 years ahead of the rest of the market, and 7 years ahead of the FIDRA campaign.
- It's important to still retain “Bag and bin” logo and a “Do not Flush” logo.
- This is not a substitute for correct disposal, just an effective backstop for when it goes wrong.



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# Tea Bags

- Most tea bags are made from plant fibres with a polymer binder.
- The binder used to be polypropylene – cheap and effective.
- This wasn't a major problem when household waste went to landfill or incineration. It was a problem for home-composters though.
- It became a problem when tea bags started to be composted in industrial composting systems.
- First highlighted as a concern in gardening magazines in 2004! WRAP's response at the time was to keep composting the tea bags (to capture the food waste).
- Most tea bags now use a PLA binder. This is great for industrial composting systems, but not for home composting.



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# Fruit Labels



- Many fruit carry a small oval label. This is most commonly used to identify the variety of, for example, apples or pears. Some labels carry provenance information or durability information.
- Not all labels are necessary, but many are.
- Labels are commonly made from conventional plastic, often polypropylene.
- Labels often end up in home compost bins or in food waste collections, especially on fruits where the skin or rind is not consumed – bananas, melons, avocados.
- Again, we face contamination of soil with persistent plastics.
- Within the UK Plastic Pact, there is an agreement to make all fruit labels from paper or compostable plastic.

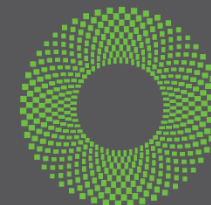


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# Wipes

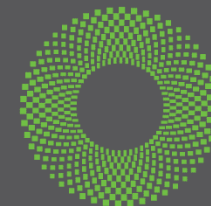
- Wipes seem to have become an essential part of modern life.
- Wipes are generally labelled with a “Bag and bin” logo and a “Do not Flush” logo.
- Despite this, wipes are very commonly flushed. This is not helped by the rise of flushable wipes, unfortunately encouraged by Water UK with their Fine to Flush standard. Not all of their water company members agree with that standard – they only want the 3 Ps.
- This means that they can pass through some parts of the sewage system, especially through overflows, reaching watercourses and the sea.
- Most wipes used to be made from a mixture of viscose rayon and polypropylene, and many still are.
- Many baby wipes are now made entirely from viscose rayon which is biodegradable at low temperatures, albeit slowly. Other wipes where more strength is required are more challenging – floor wipes.
- Not a substitute for correct disposal, just a backstop. But how effective is it?



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# Wipes



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# Compostable Carrier Bags

- With the advent of carrier bag charging, single-use carrier bag numbers dropped by around 80%.
- A significant number of shopping trips still result in the purchase of a single-use bag or, even worse, a heavy duty bag that is used only once.
- The best bag to use is a heavy duty reusable bag that you use until it wears out and until it surpasses the environmental impact per trip of a single-use bag. It should also be recyclable at the end of life.
- As has been shown already, human behaviour is not perfect, and some people will still want a bag when they shop – because they forget their reusable bags, because they are just passing and they decide that they need to shop, or because they aren't engaged.

The Observer  
Plastic bags

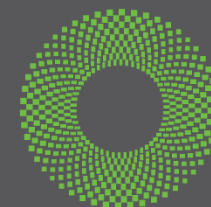
• This article is more than 2 years old

## Supermarket 'bags for life' must cost more to cut plastic use, urge campaigners

UK's 'bag for a week' habit is no green alternative - rather, it has created more problems for the environment

James Tapper

Sun 18 Apr 2021 09:45 BST



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# Compostable Carrier Bags

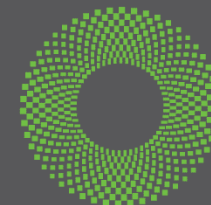
- Going back to conventional single-use bags is an option fraught with reputational risk.
- Selling EN13432 certified and well labelled compostable carrier bags allows customers to buy a bag with several benefits:
  - Can be used as a food waste caddy liner in food waste collections.
  - Can be used to collect vegetable peeling, etc for home-composting.
  - Cheaper than a caddy liner on a roll, and a much lower price-point.
  - Saves the local authority money on supplying liners.
  - Avoids persistent plastics being spread on land from AD plants – despite the statement that they remove the bags, 100% removal is not possible.
- As with many problems, there is no simple solution. Compostable carrier bags are just a part of a wider range of solutions that should be applied together.
- If you are interested in learning more about unintended consequences of carrier bag policies, take a look at the Co-op Bag to Rights report.
- <https://assets.ctfassets.net/bffxiku554r1/4TNPmg4tzrgoH39levy7IC/763dce615ef1b49a50d592c38c199bb8/Coop-Bag-to-Rights-Report.pdf>



# Other Areas For Action?

- Loose produce bags – the ideal would be to get people to use reusable bags, but people forget. Compostable (certified and labelled!)
- Sweet wrappers – twist wraps on sweets. Cellulose instead of polypropylene? Dispersion coated paper for chocolate?
- Tampons – stop using plastic applicators and go back to card. Swap polypropylene wrappers for paper.
- There's a great publication on where and when compostables should be considered – A Compostable Conundrum

<https://bbia.org.uk/wp-content/uploads/2021/12/The-Compostable-Conundrum-A-Plastic-Planet-final-19-Nov-2021.pdf>



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Thank you for listening.

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