

Marine litter, plastics and the expanding agenda

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- **Scale, Source & Impact**
- **Public awareness & the mainstream**
- **Current efforts**
- **Complexity of the solution**
- **Future directions**

Scale, Source & Impact









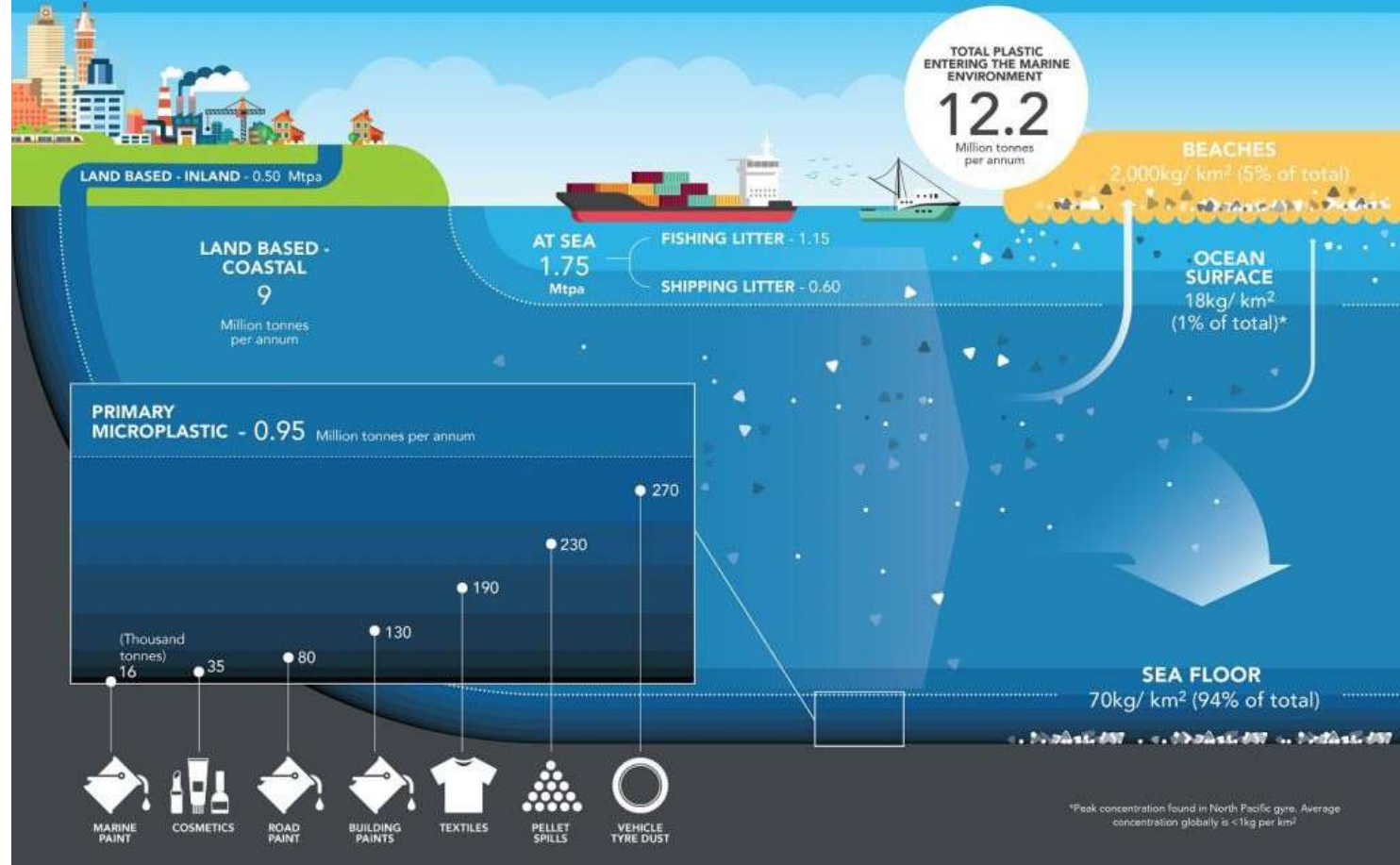






Scale

- Marine Litter has increased by 135% since 1994, with plastics increasing by 180%
- MCS 2017 – ‘on the go’ litter made up ~20% of beach litter
- 8 – 13 million tonnes of plastic entering the ocean each year
- “Unless action is taken, there is a prediction that the oceans will contain more plastic than fish by 2050”
- “There is currently a plastics patch twice the size of Texas floating in the Pacific”
- “More plastic was made in the first decade of the 21st century than the whole of the 20th”
- Plastic bottles - 450+ years to break down and eventually become microscopic
- JCR – “Plastic containers increased over the 5-year survey period, making up some 30% in 1998 compared with 12% in 1994”



Sources: Where do they come from and where do they go?

Impact









Plastic was found in a third of UK-caught fish, including cod, haddock, mackerel and shellfish

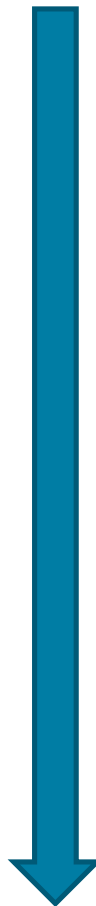
Public awareness & the mainstream – Snapshot of history

- Thor Heyerdahl *Ra II* reed boat expedition – 1970 - ‘a sewer’ of pollution
- The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter - 1972
- MARPOL 73/78 (International Convention for the Prevention of Pollution from Ships) – 1973/78
- National Aquatic Litter Group - standardised approach to measurement & classification - & conferences - mid 1990s
- Great Pacific Garbage Patch – Charles Moore, 1997
- Microplastics - growing cognisance of their presence and impact – Thompson et al, 2004
- Marine Strategy Framework Directive - 2008
- Increasing public participation in beach cleans – 2010 onwards
- The social-media explosion - 2012 onwards
- Blue Planet 2 – 2017
- Microbead Ban (cosmetics and personal care products) - 2018
- 25 Year Environment Plan - 2018

1980s – 2010 –
academic research
and reporting

2012-2017 – Huge
increase volume,
in media reports,
images and
campaigns

**2017/18 – The
Tipping Point
reached and gone
mainstream**



Current efforts

NALG



MORE OCEAN
LESS PLASTIC™
5GYRES INSTITUTE



NEPTUNE'S
ARMY OF
RUBBISH
CLEANERS



Over 40,000 people took part in MCS
and SAS beach clean events in 2017



Current efforts

For now, the major campaign focus is on tackling the 'Big 4':

1. Single-use plastic water bottles
2. Plastic bags
3. Straws
4. Coffee cups

Current efforts – Single-use plastic water bottles

- Selfridges - July 2015 stopped selling single-use plastic bottles
- ZSL – June 2016 stopped selling single-use plastic water bottles
- Borough Market - August 2017 - phase out sales of all single-use plastic bottles & introduce water fountains. Aiming to be entirely plastic-free
- NHM – November 2017 announced they will no longer sell single-use plastic water bottles and already do not provide plastic straws

Current efforts - Plastic bags & straws

- Wales - 5p plastic bag charge in 2011
 - N Ireland 2013
 - Scotland 2014
 - England in October 2015 (250+)
 - Small shops in England – 18/19?
 - 85%+ drop in use
-
- All Bar One – plastic straw removal - June 2017
 - Wetherspoon - phase out in 2018

DIAGEO


Pernod Ricard



Plastic straws suck, says Sturgeon as she calls for total ban **THE TIMES**



Current efforts - Coffee cups

- Difficult to recycle – 7m/day thrown away & ~1% recycled
- Pret a Manger – 50p discount for own mug
- Trialling filtered water stations in some branches
- Costa 25p off; Greggs 20p off; Starbucks 25p off
- Trialling in London: Starbucks charging 5p more for takeaway cups
- Innovative recycling & reuse schemes: Cup Club & Square Mile Challenge



The complexity of the solution

- Plastic use is deeply ingrained in our daily lives
- Society has moved to a 'disposable' model
- We have increasingly 'on-the-go' lifestyles
- Recycling many types of plastic waste is often difficult
- What are the social barriers to limiting plastic consumption and creating new social norms i.e. stopping pollution at source?
- What can we do about the pollutants already there?

The complexity of the solution – coffee cups

- Starbucks - September 1998, first shop in the UK. It now has **884** shops.
- Costa - in 1995 it had 41 shops and it now has **2,121** across the UK
- Pret a Manger – in 1992, it had 3 shops and in 1997, 53 shops. Now they have **500** shops and sell 1.4 million coffees a day
- The UK is leading market for branded coffee shops in Europe

The complexity of the solution – coffee cups

- In 1998 Starbucks offered a reusable cups discount of 10p
- Before upping it to 25p in 2008
- In 2016 it doubled this to 50p (now 25p again)
- Only 1.8% of its customers use reusable cups

The complexity of the solution – Single-use water bottles

In a recent survey:

- 7% of respondents said they drink from water fountains or public taps
- 55% were concerned about the cleanliness of public water taps, fountains and dispensers.
- 11% said they would pop into a cafe or restaurant to ask for tap water.

Recommendations included:

- Encouraging businesses to provide free drinking water to both customers and non-customers
- Raising public awareness of the cleanliness and quality of UK tap water



The complexity of the solution – Single-use water bottles

- 38.5m plastic bottles are used every day in UK – only just over half make it to recycling
- A million plastic bottles are bought globally every minute & will increase by 20% by 2021
- The majority of plastic bottles used across the globe are for drinking water
- The Chinese public's consumption of bottled water accounted for nearly a quarter of global demand
- Bottled water is driving demand and the spread of a western, urbanised “on the go” culture to China
- In 2015, consumers in China purchased 68.4bn bottles of water and in 2016 this increased to 73.8bn bottles, up 5.4bn

Future direction and solutions

INDIVIDUAL CHANGES

- Continuous awareness raising (clean ups / campaigns)
- Focus on behavioural change / targeting social norms to reduce consumption at source
- Refuse all single use items
- Pilot innovations

SYSTEMIC CHANGES

- Reframing the lens – ‘marine litter’ to ‘plastic pollution’
- Plastic manufacturers, producers and retailers to take a lead
- Ghost gear
- New legislation – single use charge; DRS; CBS; EU; UN
- Recycling overhaul

Collaboration is key

Final thoughts

- In 25 years many of the measures will have worked
- However, a larger population and the current trend of increasing consumption by the public (and therefore raw materials) may mean the use of plastic grows and virgin plastic is still being used
- I am more optimistic than I have been in the previous 25 years. The impact on the ocean has got worse but I hope we have reached a tipping point in our current way of using plastic
- We need to be alive to future trends and changes and to prevent a repeat of the last 25 years

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- It will get worse before it gets better
 - Mainstream - Society must capitalise on the momentum
 - Current efforts – single-use focus is the right one
 - Complexity of the solution – social norms must change
 - Future directions – producer & individual responsibility, innovation, research, behaviour change, collaboration.