

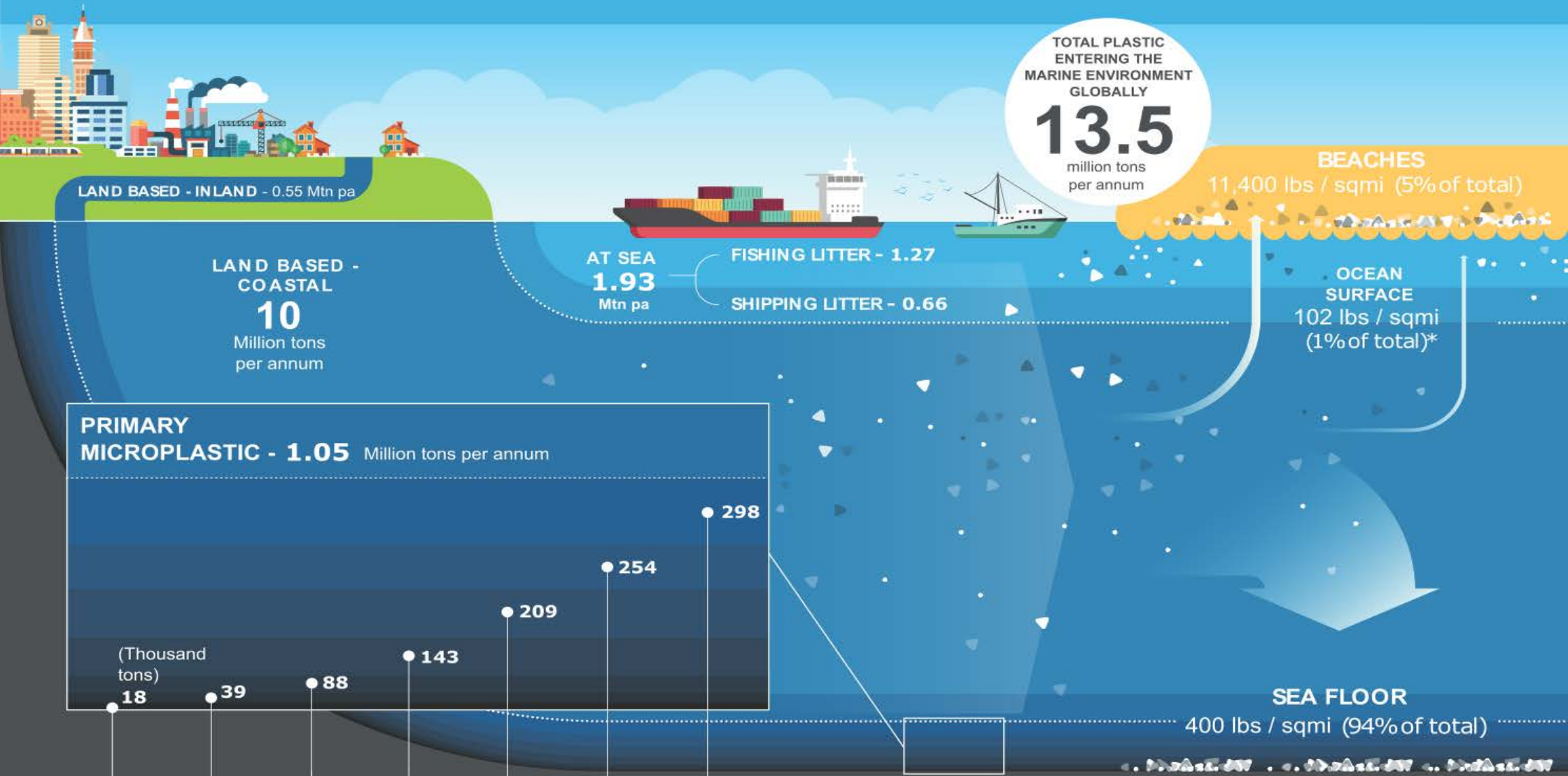
Ocean Litter

Tokyo Development Learning Center

Tokyo

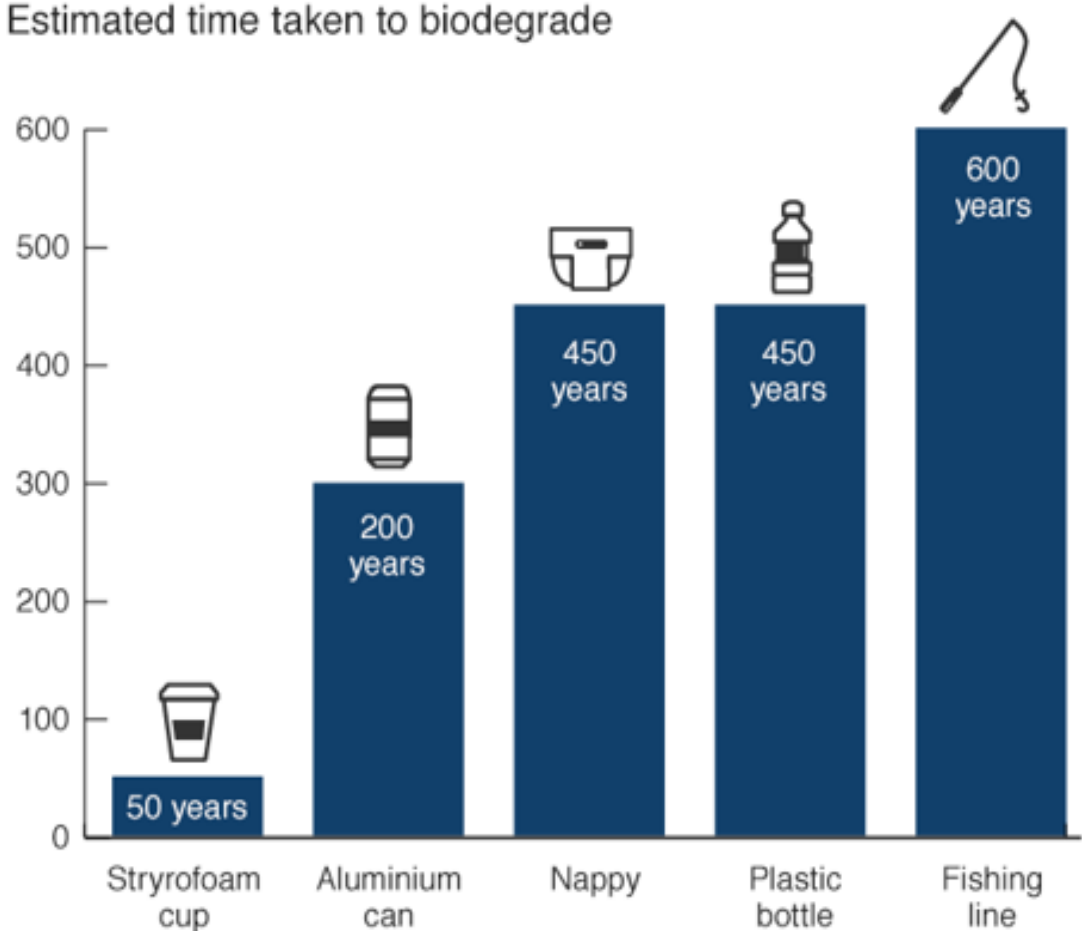
September 2018

PLASTICS IN THE GLOBAL MARINE ENVIRONMENT: WHERE DO THEY COME FROM? WHERE DO THEY GO?



*Peak concentration found in North Pacific gyre. Average concentration globally is <6 lbs per sqmi

Estimated Time for Plastic to Biodegrade



Exact time will vary by product type and environmental conditions

Source: NOAA Woods Hole Sea Grant

Volumes of Plastic

- ▶ Production of Plastics will increase: 50% increase over 10 years projected (2015 - 2025)
- ▶ 8 - 10 million metric tons plastic leaks globally into the ocean each year
- ▶ By 2025: 250 million metric tons of plastic in the ocean

Top 20 Countries Ranked by Mass of Mismatched Plastic Waste in 2010

Year 2010		
Rank	Country	Mismatched plastic waste [MMT/year]
1	China	8.82
2	Indonesia	3.22
3	Philippines	1.88
4	Vietnam	1.83
5	Sri Lanka	1.59
6	Thailand	1.03
7	Egypt	0.97
8	Malaysia	0.94
9	Nigeria	0.85
10	Bangladesh	0.79
11	South Africa	0.63
12	India	0.60
13	Algeria	0.52
14	Turkey	0.49
15	Pakistan	0.48
16	Brazil	0.47
17	Burma	0.46
18	Morocco	0.31
19	Korea, North	0.30
20	United States	0.28

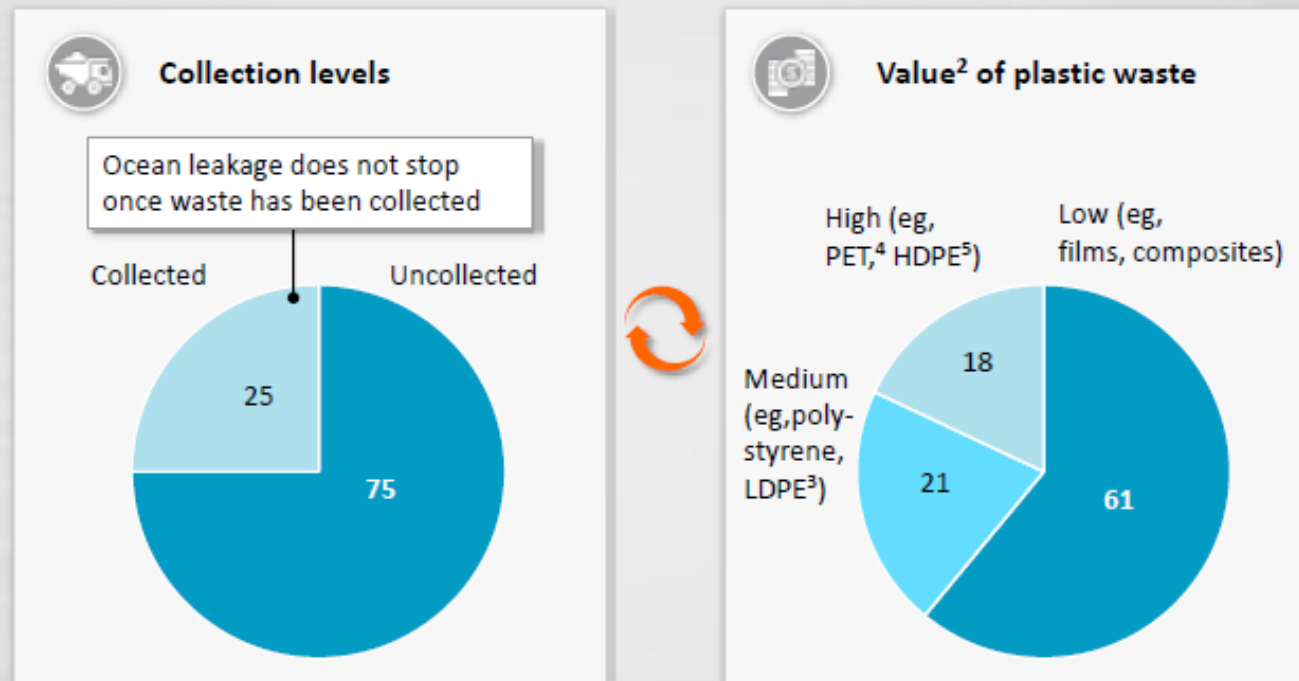
Table in million metric tons (MMT)

Source: Jambeck and al, 2015

Hot Spots: Where is Plastic Leaking From

There are two drivers of plastic leakage: waste that remains uncollected, and low residual value of some plastic waste.

% contribution to ocean plastic, by driver¹



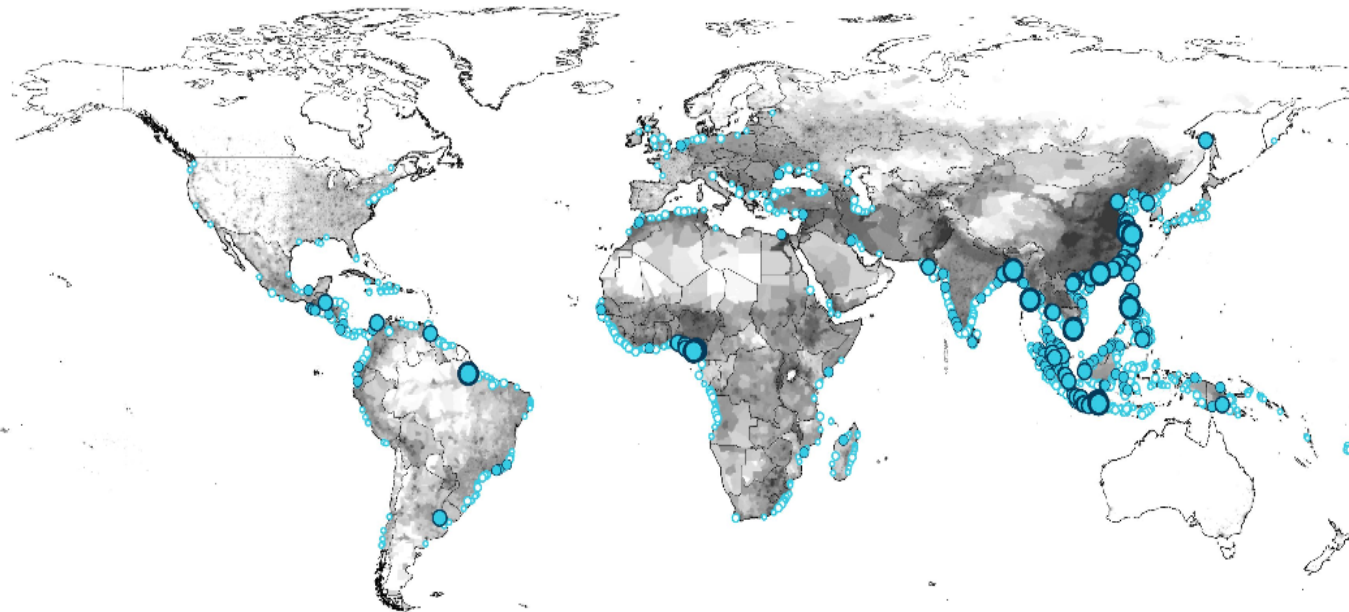
¹ Average, 5 focus countries: China, Indonesia, Philippines, Thailand, Vietnam; ² "Value" is a quantitative function of price at secondary dealers and time taken to collect, combined with a qualitative function of homogeneity and likelihood of rejection by secondary dealers; ³ Low-density polyethylene; ⁴ Polyethylene terephthalate; ⁵ High-density polyethylene.

Source: McKinsey analysis

Top Rivers at the Origin of Marine Litter

GLOBAL YEARLY PLASTIC INPUTS FROM RIVERS INTO OCEANS

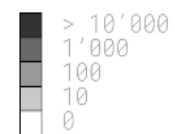
THE OCEAN CLEANUP



PLASTIC INPUTS FROM RIVERS [TONNES/YEAR]



MISMANAGED PLASTIC WASTE PRODUCTION [TONNES/YEAR]



Rivers:

Yangtze	Brantas
Ganges	Amazon
Indus	Pasig
Xi	Niger
Huangpu	Mekong
Cross	Irrawaddy
Nile	Solo

Source: Lebreton et al, 2017 and Schmidt et al, 2017

Growing Global Partnerships on Marine Plastic Debris

- ▶ UN Resolution on marine plastic waste (December, 2017)
- ▶ China Council for International Cooperation on Environment and Development (CCICED)
- ▶ ASEAN, APEC, the World Economic Forum, GEF
- ▶ Global MDTF on marine litter (Norway in the lead)
- ▶ Private corporations - getting on board

Going Forward

- ▶ Call for identification of hot spots as a stop-gap measure
- ▶ Calls to increase the recycling content in packaging (50% of all plastics produced) in order to create better incentives for the formal and informal industries to capture plastic waste
- ▶ EU: draft ban on single-use plastic
- ▶ Calls for international binding resolution led by the UN with set targets (similar to ozone prevention, Montreal Protocol)
- ▶ Traditional land-based solutions to increase collection coverage, improve disposal, introduce and sustain treatment