

# Global Problem of Marine Pollution by Plastic Litter



Transboundary marine litter

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# Impacts of Marine Litter

- Deterioration of landscape of coasts
- Entanglement and ingestion of marine life
- Pollution of tidal flats and fishing grounds
- Impacts of fishing resources by discarded fishing gear (Ghost Fishing)
- Damage on navigation of vessels

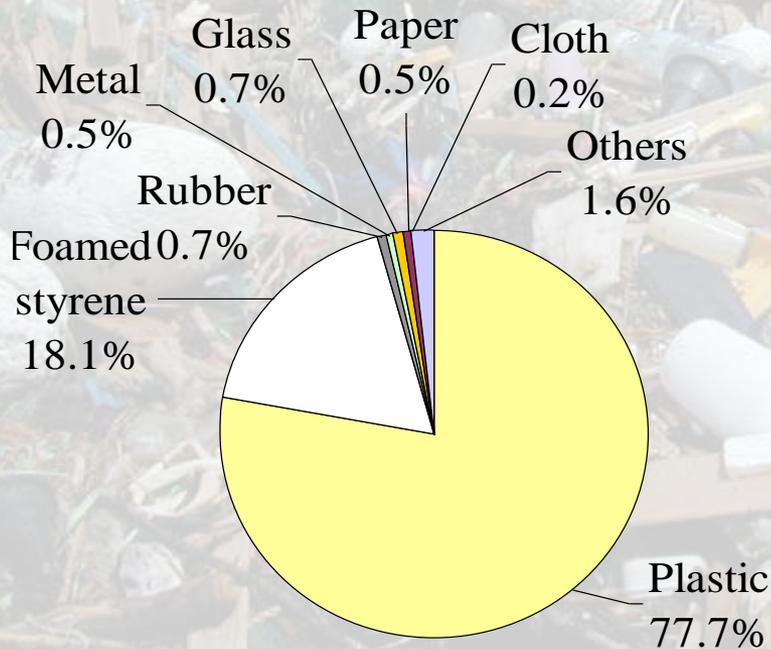
# Marine Litter

- (1) Washed-up litter on the beach
- (2) Drifting litter in the ocean  
(Transboundary litter)
- (3) Seabed litter

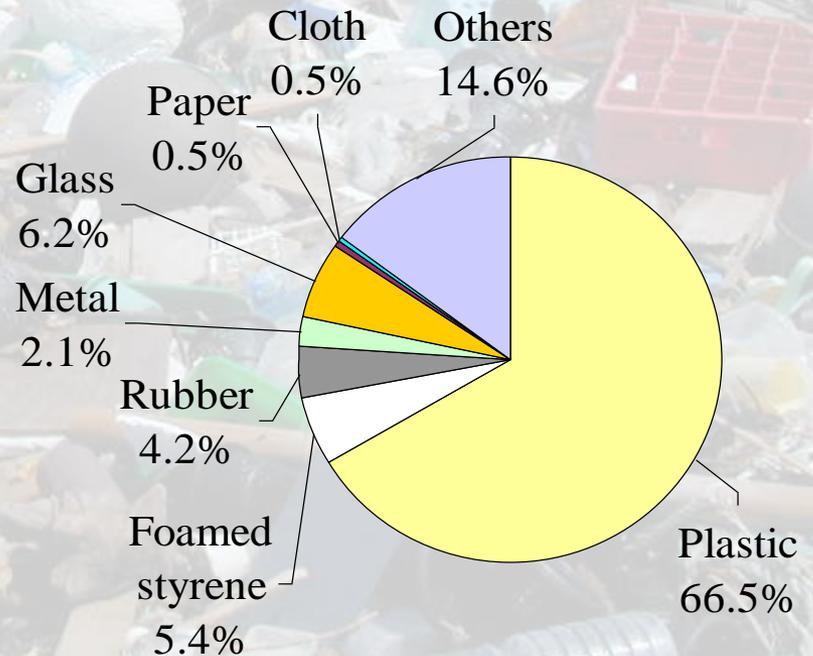
# (1) Washed-up litters on the beach

## Composition of washed-up litters, Artificial litter

No. of pieces

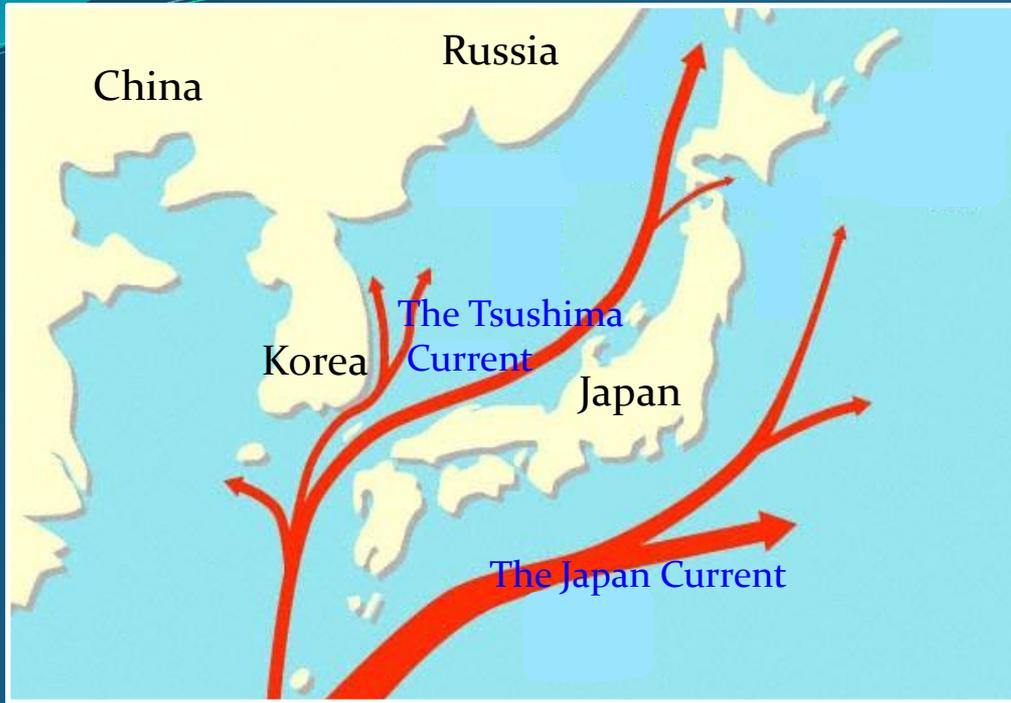


Weight



Report of washed-up driftage on the coasts of the Northwest Pacific Region

# (1) Washed-up(Transboundary) litters on the beach



Large volumes of plastic litters drift onto coasts and remote islands on the Japan Sea



Life articles



Fishing nets and ropes



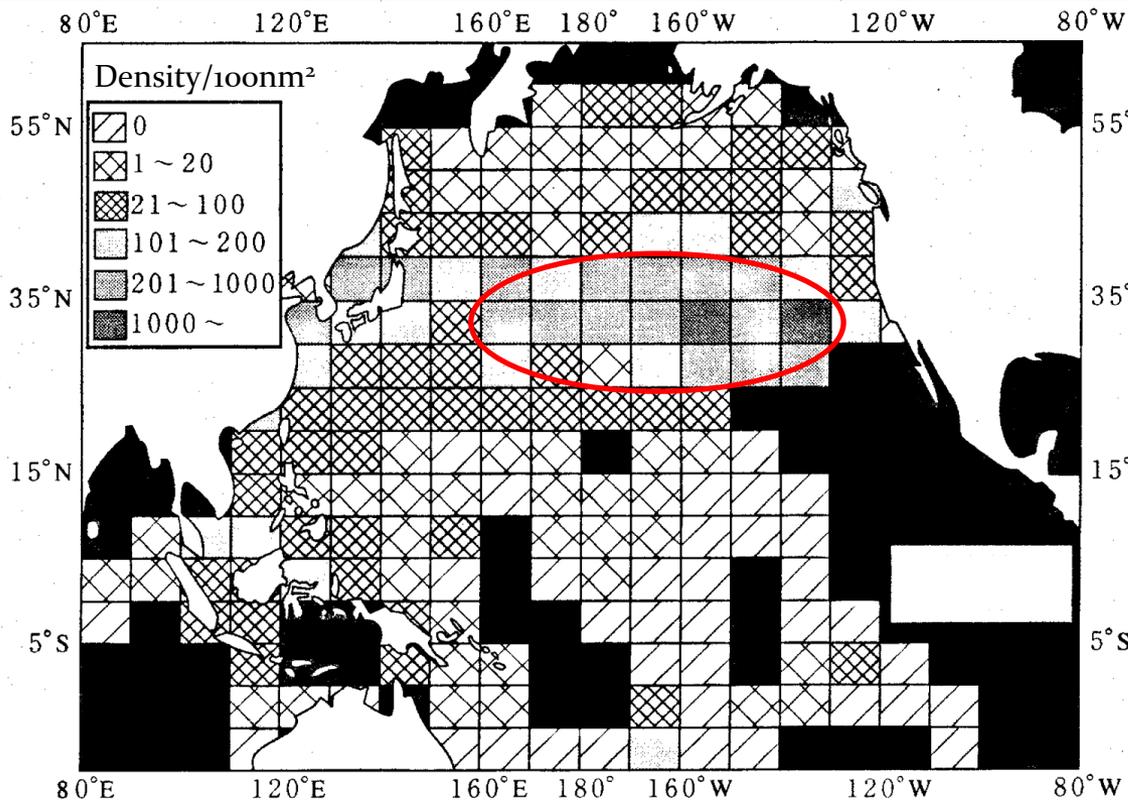
Styrofoam Floats



Plastic container

## (2) Drifting litter in the North Pacific Ocean (Transboundary litter)

### Distribution of drifting litter



**○ : High density areas of drifting litter**

### Composition of drifting litter

Type	(%)
Styrofoam	22.0—26.6 %
Plastic	21.3—23 %
Fishing net	0.5—1 %
Fishing float	9.4—12 %
Wood and Log	10.0—14.5 %
Sea weed	17.3—25 %
Glass	2.1—2.4 %
Metals	1.4—1.7 %
Others	3.3—4.6 %
No. of pieces	25,910—36,849

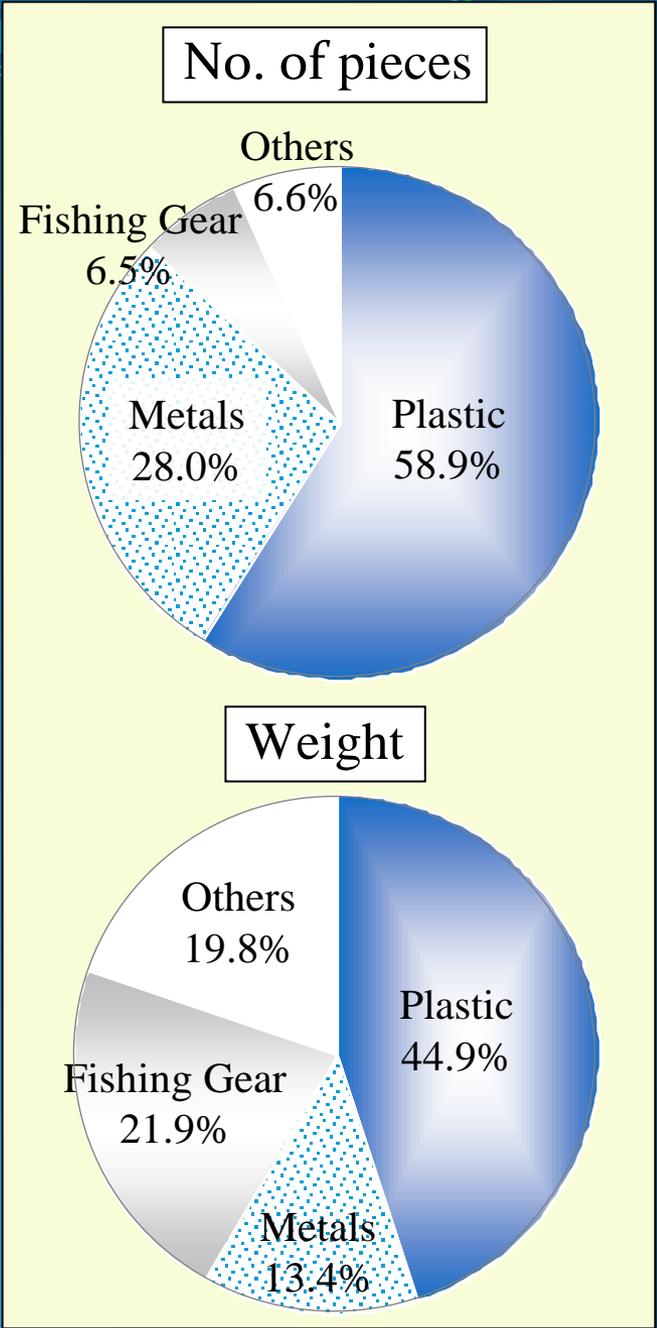
(1986-1991)



# Litters collected from seabed of Tokyo Bay



Litters collected per 1 day's trawling



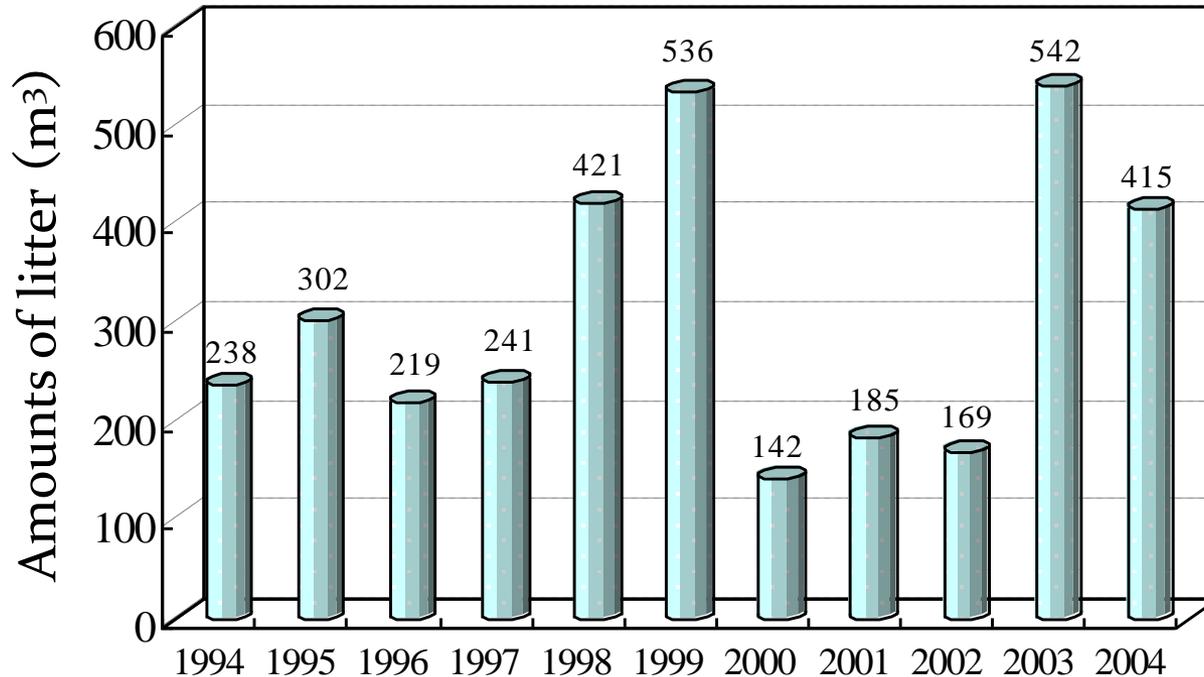
# Drink cans accumulated on the seabed of Tokyo Bay



Steel can  
(Most oldest can)

new cans to old cans

# Amounts of washed-up litters on the beach nationwide



Local Government:  
38  
Clean-up activity:  
16,810  
Participants:  
1,320,000

Total weight of litter ≐  
50,000 - 150,000 tons

# Characteristics of washed-up litters drift onto coasts and islands of Japan

- Daily life litters\*<sup>1</sup> : plastic products (shopping bags, bottles, food containers, drink cans etc.) large quantities
- Fisheries related wastes (nets, ropes, floats)\*<sup>2</sup> : massive volume and weight
- Industrial chemical containers : (H<sub>2</sub>O<sub>2</sub>, HCl, NaOH etc.) hazardous chemicals
- Medical wastes : syringe, medical bottle dangerous wastes
- Litters across the sea from other countries (transboundary marine pollution)

Weight and capacity of fisheries related wastes

Fisheries wastes\*<sup>2</sup> ≫ Daily life wastes\*<sup>1</sup>

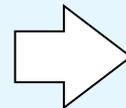
\* 1: several gram (g) to several ten gram (g)

\* 2: several kg ~ more than 1000kg

# Problems with marine litters

- **Collection and processing of marine litters :**  
local governments take charge of collecting and processing
- **Characteristics of marine litters :**  
contain salt, moisture and sand  
massive volume and weight
- **Recycling of marine litters containing plastics :**  
difficult to separate  
most of litters are processed by landfill without separation
- **Processing facilities :**  
incineration plants and processing ability are limited
- **Processing cost :**  
processing cost becomes big burden to local government  
disposal cost averages some 50,000yen/ton

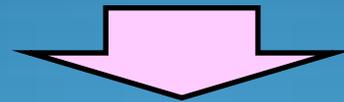
Total marine litter amount nationwide is estimated at a hundred thousand tons



Processing cost amounted to 5-10 billion yen

(Estimation from the survey conducted by MB21)

- 1) The quality and the large amount of marine litter washed ashore cannot be disposed.
- 2) The responsibility of those concerned is unclear, and budget is insufficient.
- 3) In some areas, the source of the problem is in other countries and areas, making it difficult to solve the problem.



**To solve the Marine Litter problems**



# To solve the Marine Litter problems

Therefore, further action was necessary to solve these problems.

## ● April, 2006

Relevant central government ministries started discussions regarding countermeasures to marine litter.

The conference was made up of director-generals of concerning ministries.

## ● March, 2007

The conference compiled countermeasures.



# “Law for the Promotion of Marine Litter Disposal” was enacted (July, 2009)



The government has been investigating not only the current situation of marine litter, and its effective collection and disposal methods.

## Basic Direction

**Promotion of disposal of marine litter**

- Clarification of the responsibilities

**Effective reduction of generation of marine litter**

**Promotion of international cooperation**

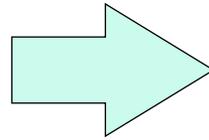
**Securing cooperation among various actors**

**Comprehensive conservation and restoration of the coastal environment**

**It is expected that various activities encouraged by the law are going to improve the situation of marine litter in Japan.**

# Development of environmental lower load materials

Non-degradable plastics  
(Conventional plastics)



Eco-friendly plastics  
(Biodegradable plastics)

## Applications of biodegradable plastics



food packaging, agricultural materials,  
miscellaneous, leisure good etc.

## Fishing line and fishery materials



Biodegradable  
fishing line



Biodegradable  
plastic worm



Biodegradable  
foamed plastic

Fish box(foamed plastic)



**Thank you  
for your attention**