

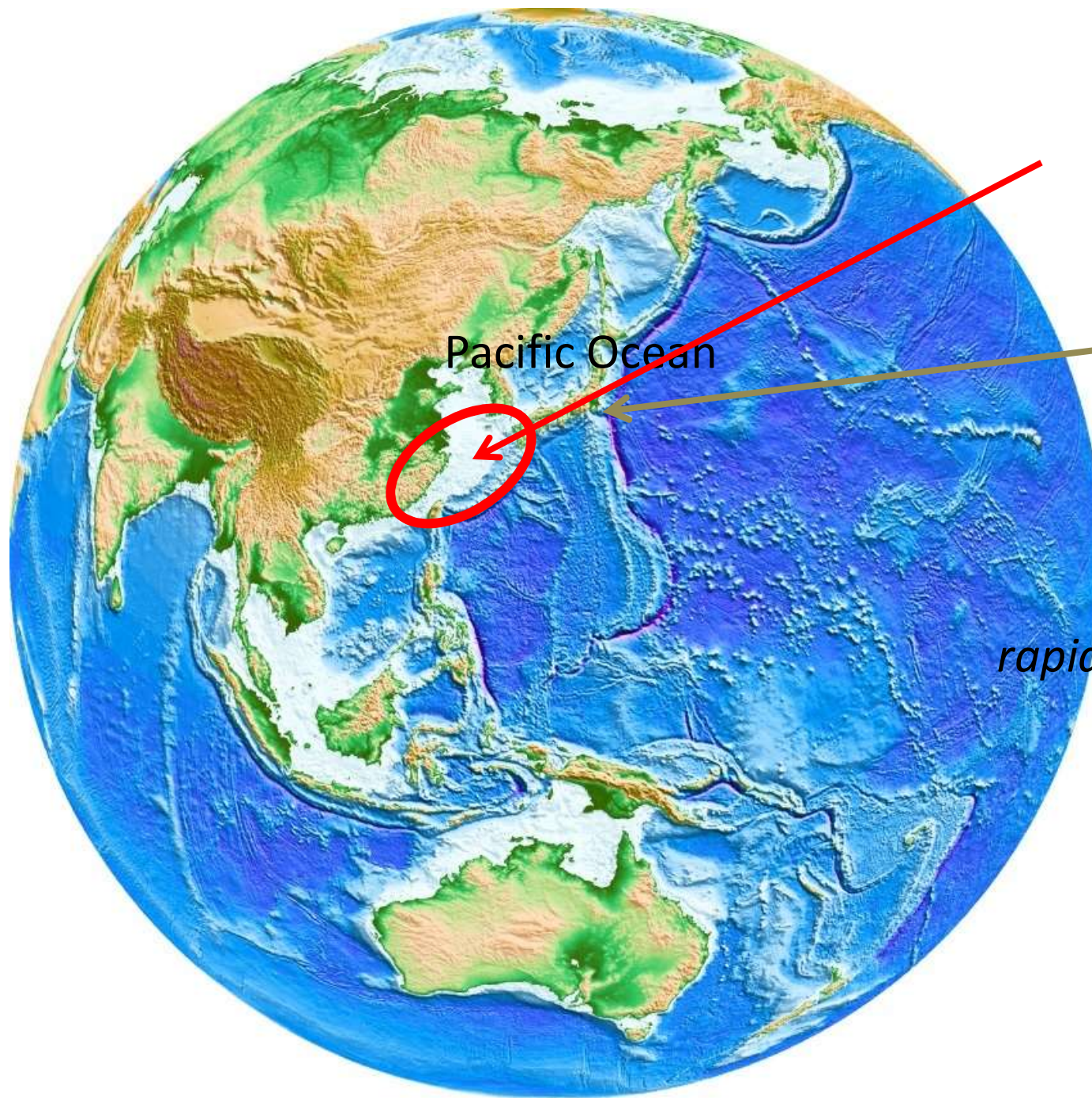
Marine Plastic Waste

-The Seas Connect Local and Global-



Satoquo SEINO (Ph.D., Asoc. Prof.,
Kyushu University, Japan)

清野聡子(九州大学大学院工学研究院 准教授)



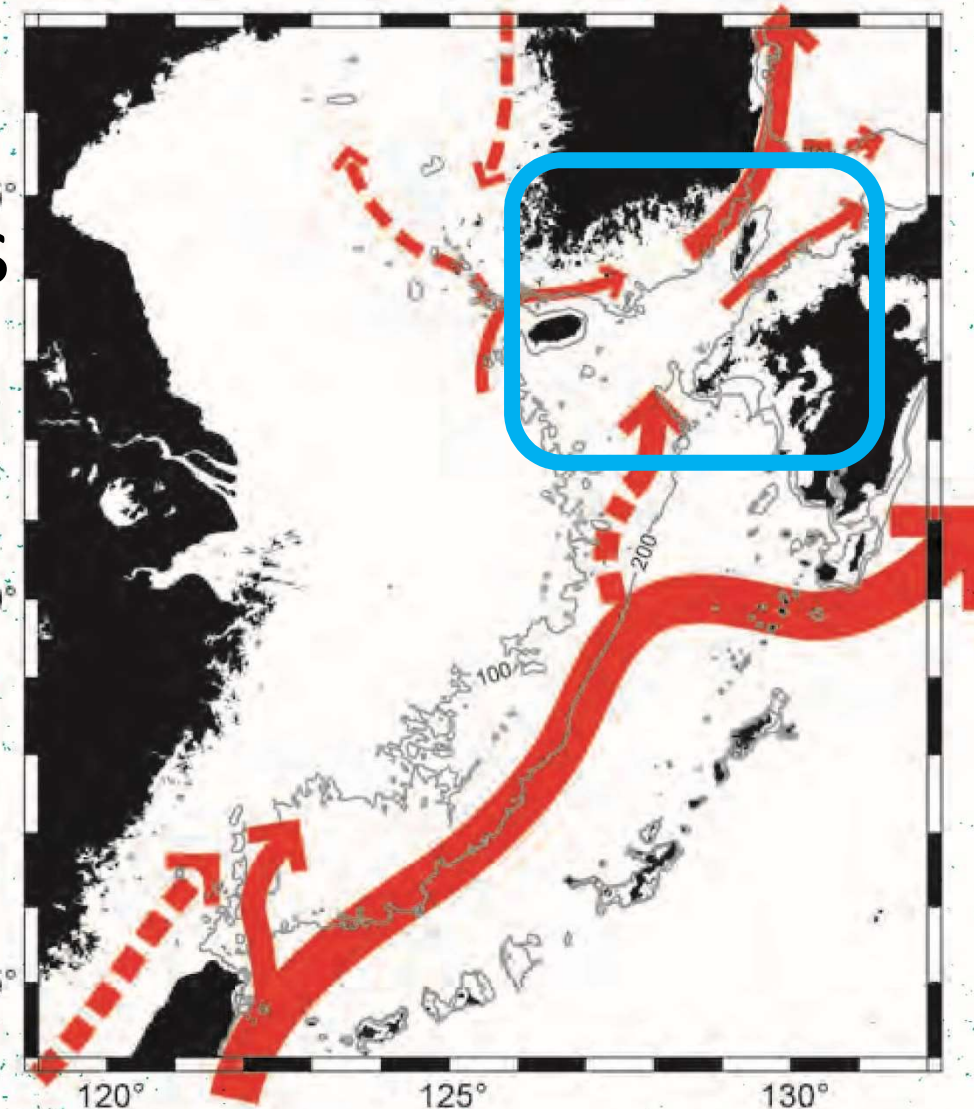
East China Sea
(Enclosed Sea)

Japanese
Archipelago

Pacific Ocean

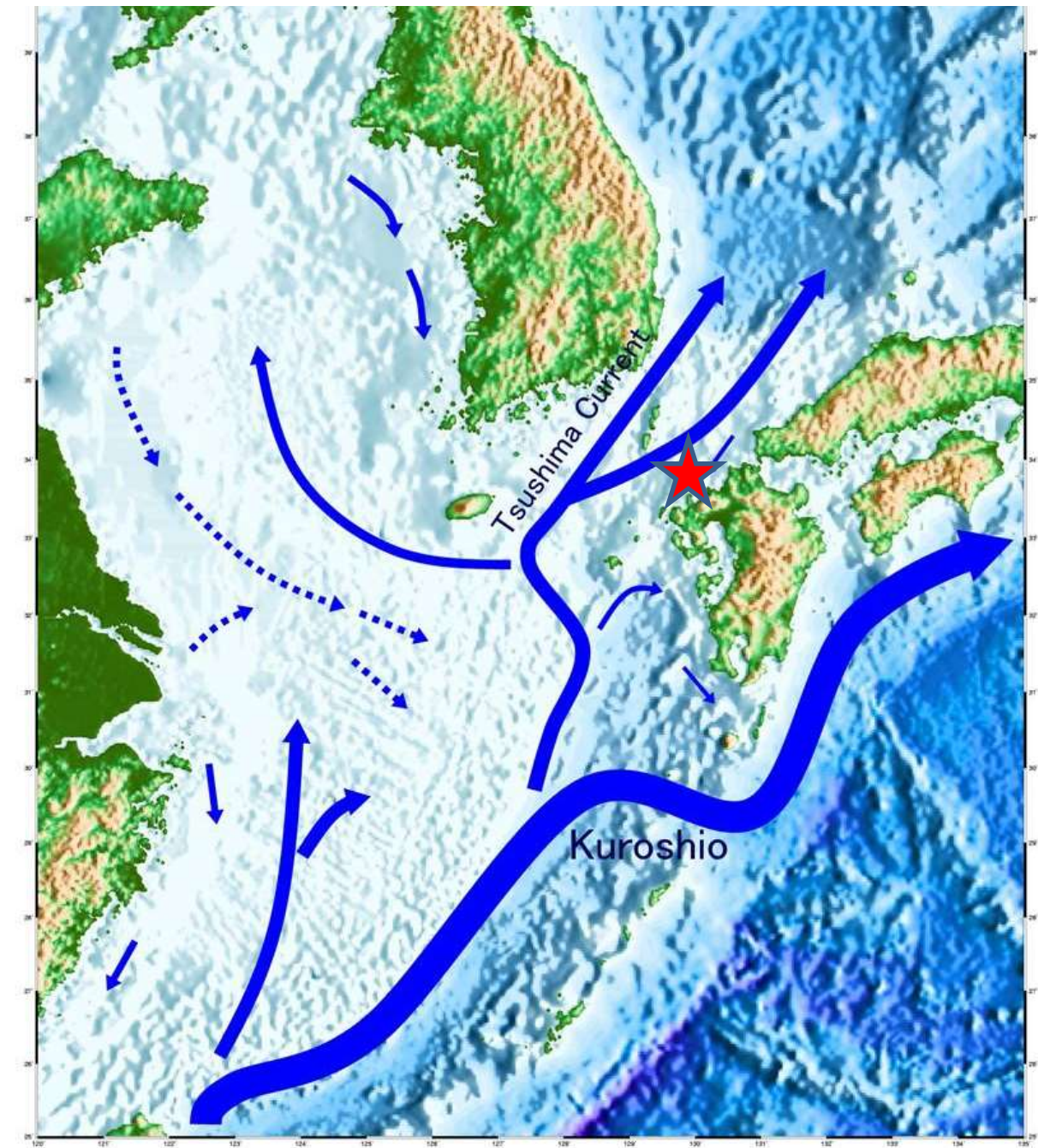
*Recently
polluted by
modernization +
rapid economic growth
in east Asia*

Important:
Connect our efforts
based on ocean
currents



対馬暖流の流路。黒潮から分岐した暖かい海水は、対馬海峡に溢れるように流入し、日本海へと北上していく。

(図作成：水産大学校 滝川哲太郎准教授)

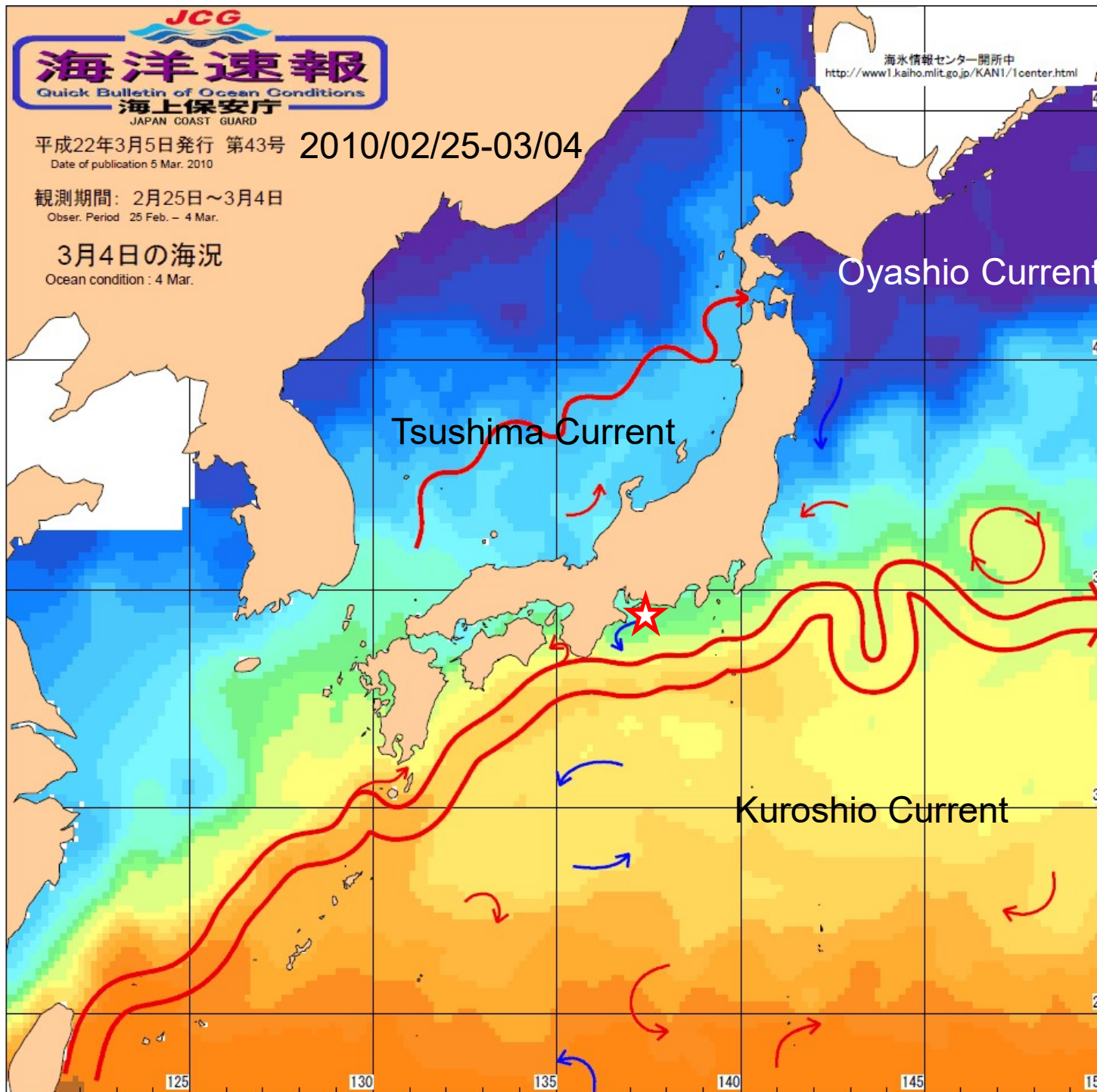


Microplastics

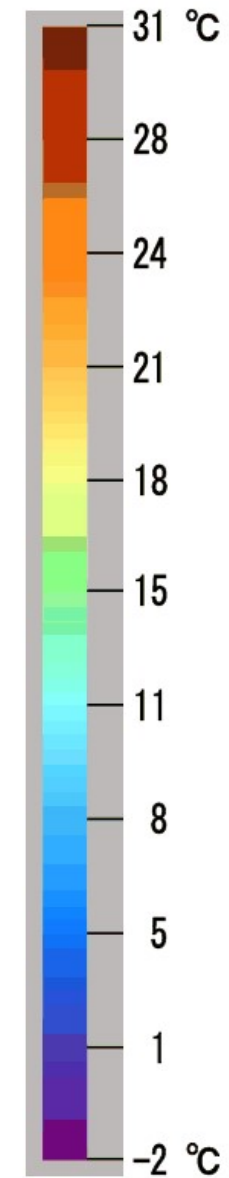


ISSUE of
Marine life
to
Human being.

Currents bring
various (natural
and artificial) drifted
matter.



水温スケール



Sustainable Development Goals

SDGs 2015 - 2030 Global Goals



SUSTAINABLE DEVELOPMENT GOALS

世界を変えるための17の目標



Marine env.

Biodiversity

Urban waste

Consumption

Corp. activities

Partnership

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Precious habitats are being buried

Can we really solve this problem? Tough challenges...

Engtangled ...
by ghost fishing



Habitat deterioration





67

Marine Debris on Biodiversity

IMPACTS OF MARINE DEBRIS ON BIODIVERSITY



*Current Status and
Potential Solutions*



Biological diversity
International Treaty



National Strategy



Local Strategy

Polluted fishing areas

Scenic blight



Plastic breaks into small pieces





Chunks→fragments→particles
“MICROPLASTICS”

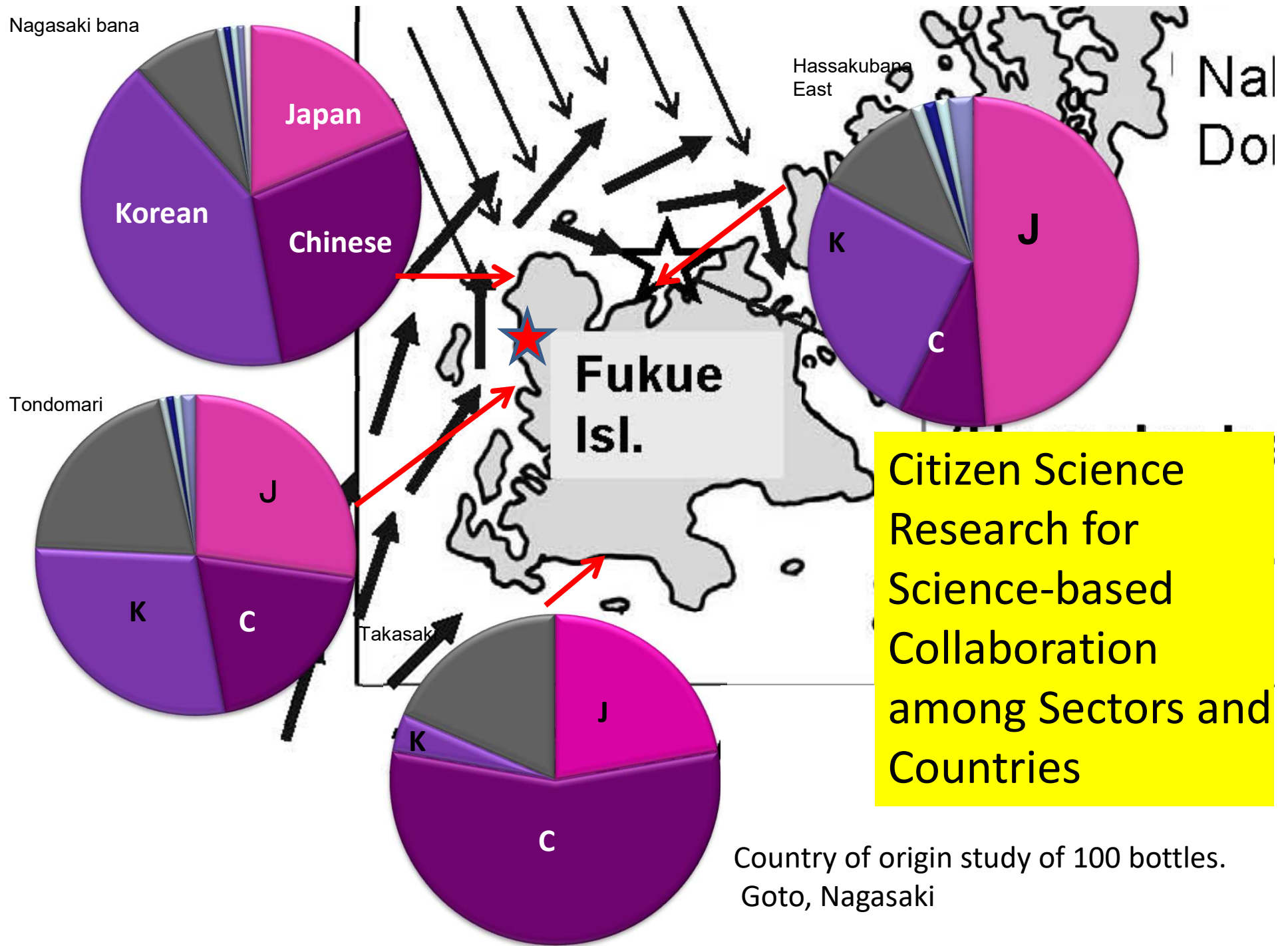
PET Bottle Collection Survey

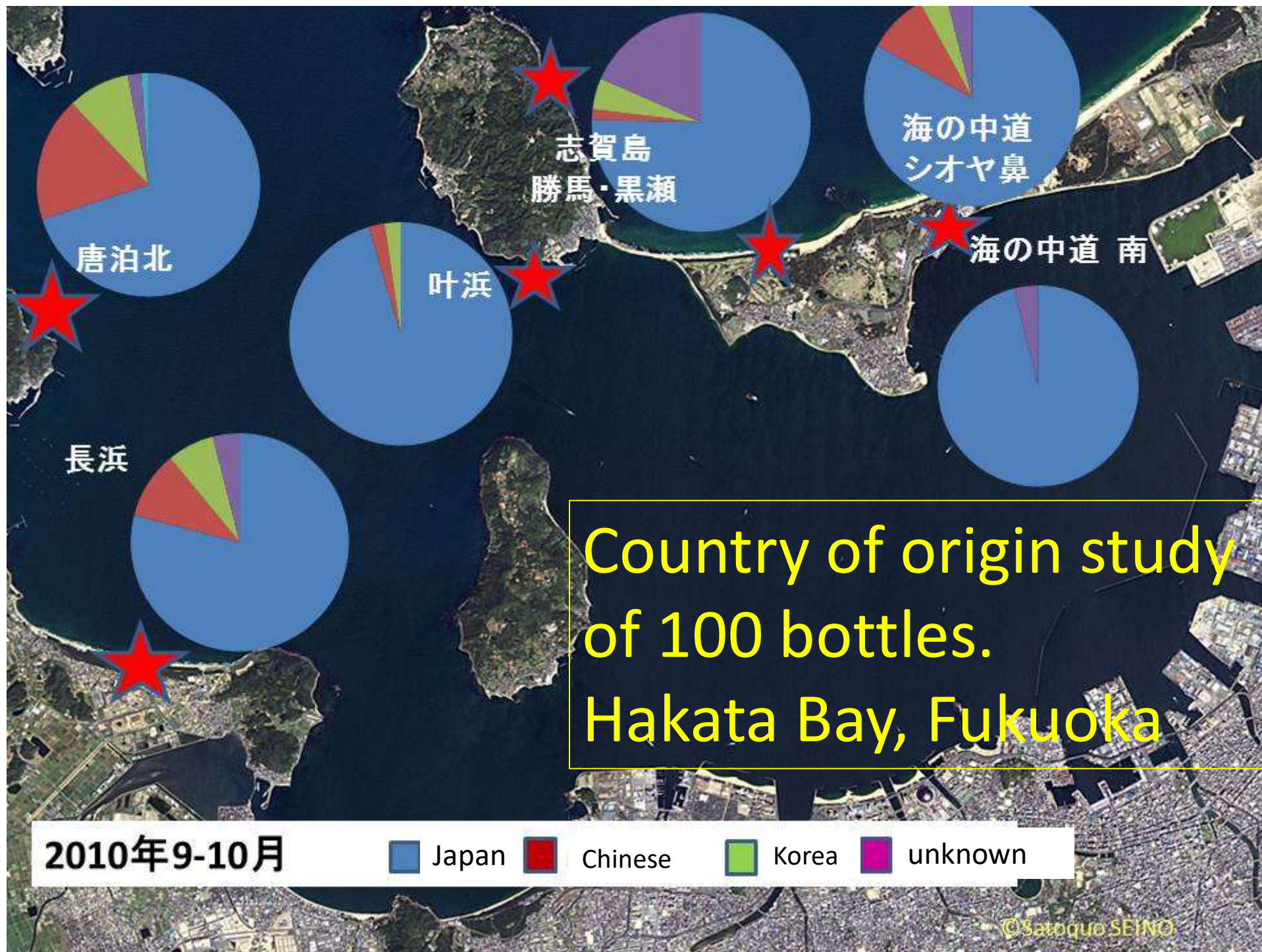
Where do they come from ??



Their origins are determined on the basis of characteristics of bottle bodies, caps and labels.





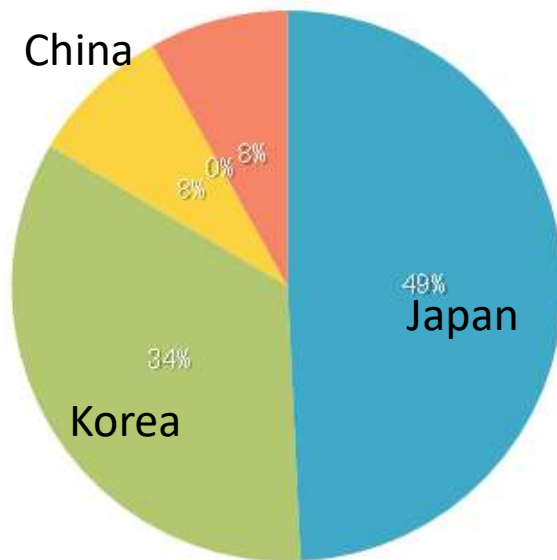


Munakata, Fukuoka June, 2019

Stranded PET Bottles Survey

Products of Japan and other countries

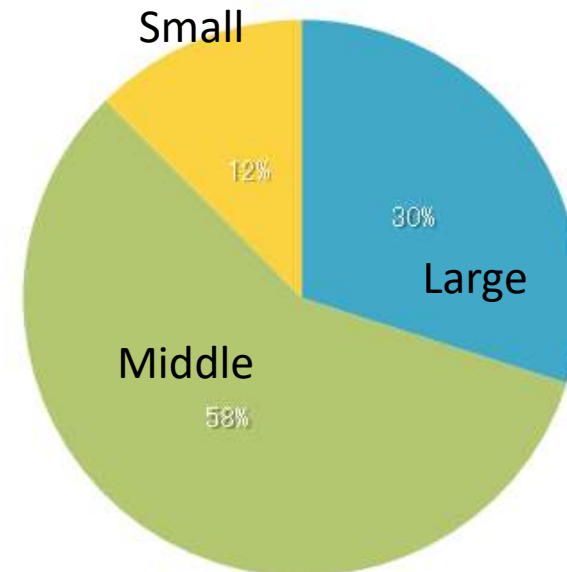
■日 ■韓 ■中 ■その他 ■不明



合計:	394	
日	194	49.0%
韓	135	34.0%
中	33	8.0%
その他	0	0.0%
不明	32	8.0%

Size of bottles

■L ■M ■S

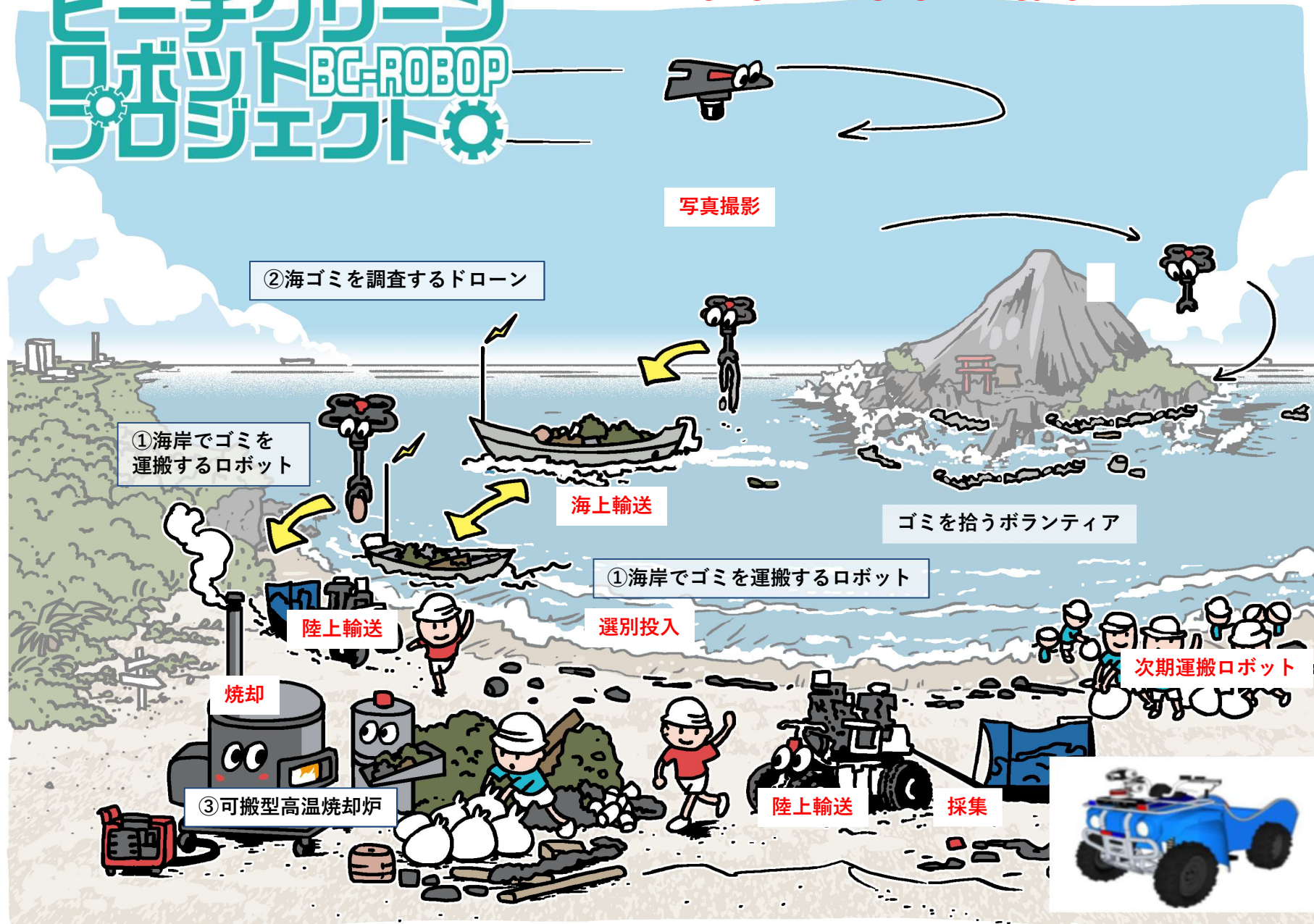


サイズ		
L	118	30%
M	227	58%
S	49	12%

(九州大学大学院工学研究院 環境社会部門
生態工学研究室 清野聡子・王燿・翟禕鵬)

ビーチクリーン ロボットプロジェクト

BEACH CLEAN ROBOT PROJECT



“MARINE Initiative” toward Realization of the Osaka Blue Ocean Vision

- Toward realization of the “**Osaka Blue Ocean Vision**” that we aim to reduce additional pollution by marine plastic litter to zero by 2050, which was shared at the G20 Osaka Summit, Prime Minister Abe announced that Japan will support developing countries’ efforts including their capacity building and infrastructure development in the area of waste management at the summit.
- To this end, the Government of Japan has launched the “**MARINE Initiative**” to advance effective actions to combat marine plastic litter at a global scale focusing on (1) **Management of wastes**, (2) **Recovery of marine litter**, (3) **Innovation**, and (4) **Empowerment**.

Japan will support empowerment in developing countries to promote waste management, recovery of marine litter, and innovation, mainly through the following policy measures.

1. International Cooperation including bilateral ODA and assistance through international organizations

- ◆ Provide ODA and assistance through international organizations to:
 - **Develop capacities and institutions** including waste-related legal frameworks and waste sorting/collection systems to **promote waste management and “3R (Reduce, Reuse, Recycle),”**
 - Introduce quality **environment infrastructure** such as waste disposal facilities including recycling facilities and waste-to-energy plants.
- ◆ Provide **training for 10,000 officials** engaging in waste management all over the world by 2025.



2. International Operations by Japanese Companies, NGOs, and Local Governments

- ◆ Promote international business promotion and partnerships with NGOs and local governments, to facilitate **export of infrastructure** such as waste-management-related facilities, and **innovation and technology introduction** regarding plastic alternatives and recycling.



Waste-to-energy plant



Marine biodegradable plastics

3. Dissemination and Sharing of Best Practices of Measures to combat marine plastic litter

- ◆ Disseminate and share Japan’s best practices through relevant international conferences and initiatives.
- ◆ Advance sharing knowledge with ASEAN, through the “**Regional Knowledge Centre on Marine Plastic Debris.**”

Input Citizen Voice of Marine Litter Issues to G20 Decision

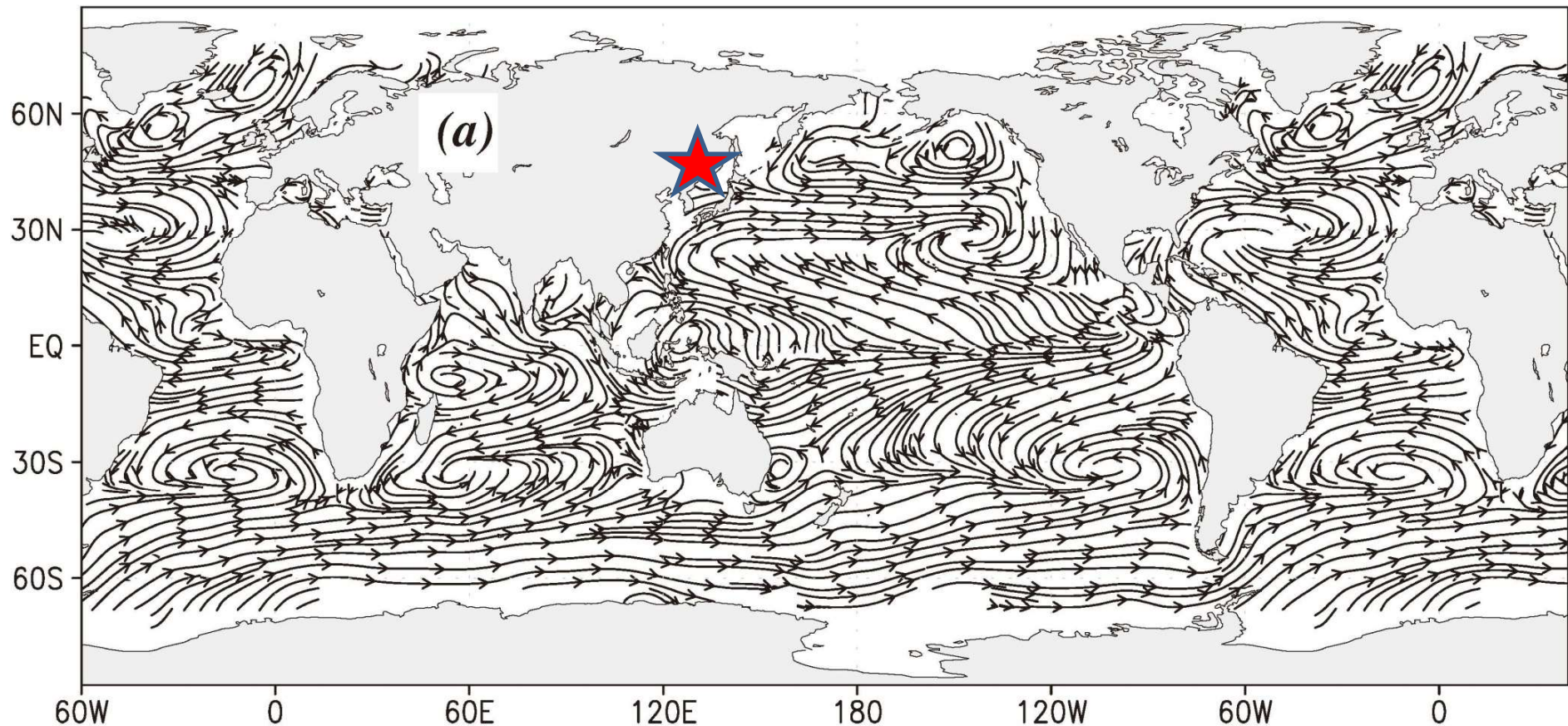


Apr. 2019



Global marine circulation system disperse marine plastic waste !!

Plastic set adrift and breaking down, entering the open seas cannot be recovered!



(N. Maximenko *et al.* 2011)

Community leaders call international volunteers of next generation



Conservation/Use
hotspots in western
Kyushu
↓
Marine
environment
activity network

National park
西海国立公園
国指定名勝
Geo-Park
世界遺産2018
ジオパーク推進

Marine Protected Areas 海洋保護区政策
Sustainable fisheries 持続可能な水産物
Beach clean-ups 海ゴミ市民活動

Munakata World Heritage
世界遺産2017

International conference
宗像国際環境会議
カブトガニ・元寇防塁

対馬

宗像

北九州

壱岐

糸島

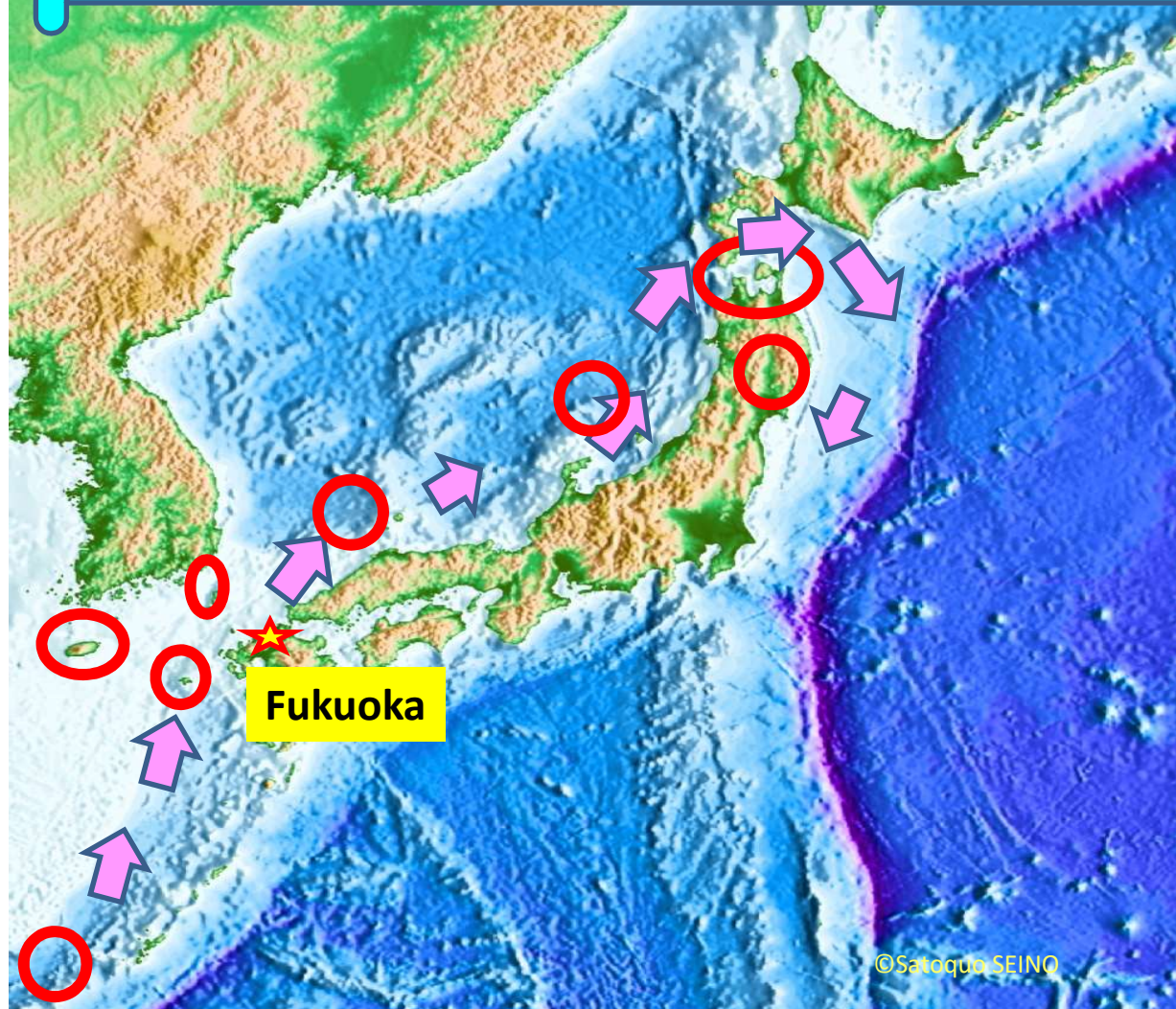
福岡

五島



Forming Tsushima Current Watershed Marine Protected Area Network

*Local-
National-
Regional-
Global*



Islands-
Archipelago-
Asia Pacific



Thank you for your attention.

Floating piers washed away into Pacific Drifted to west coast of U.S.!

Distance and Time Traveled for 4 Debris Items

