

海を汚している行動はどれですか？

How we pollute the sea?



NEAR Project Report Survey of Marine Litter on Beaches

SUMMARY 2012



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Northwest Pacific Region Environmental Cooperation Center

Survey of Marine Litter on Beaches

The Survey on Marine Litter of Beaches along the Northwest Pacific Region by the Northwest Pacific Region Environmental Cooperation Center(NPEC) is a cooperative joint effort undertaken to understand the extent of coastal pollution caused by marine litter washing ashore. It was started in 1996 and has been continued since 2010 as the NEAR* Project. The survey is an international collaboration among Japan, China, Korea, and Russia.

So far, we have had the cooperation of 38 local governments across 4 countries, covering 184 beaches — a total of 29,316 people have cooperated in the survey.

* The Association of North East Asia Regional Governments (NEAR)

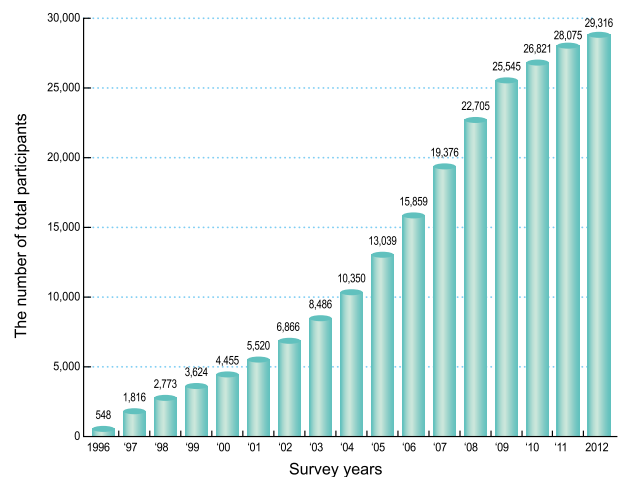


Figure 1. Change in the total number of participants involved in the survey

Summary of Survey of Marine Litter 2012

Survey period

The survey was conducted from August to December of 2012.

Survey participants and beaches surveyed

The survey was performed with the cooperation of local governments, NGOs and NPOs, and elementary and middle schools. For the survey 2012, a total of 1,241 people across 15 local governments from Japan, Korea, and Russia, participated, covering 33 beaches.

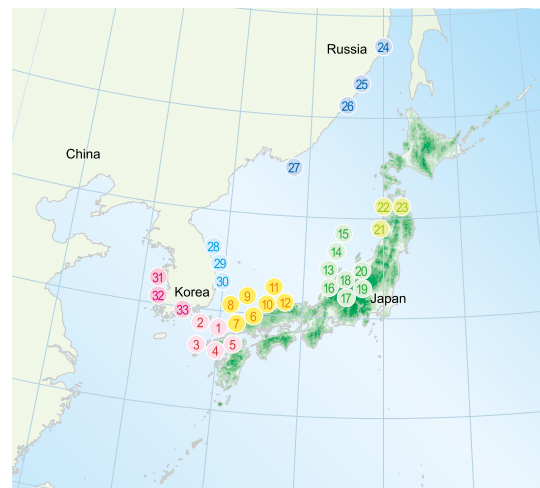


Figure 2. Surveyed beaches, 2012

Survey results

(Note: For details on survey methods, please consult the reference materials)

The average amount of marine litter per 100 m² was 318 pieces. Of this, plastic was the most prevalent at an average of 244 pieces (or 77% of the total). The next most common type was styrene foam, averaging 53 pieces (17%).

The average weight of marine litter per 100 m² was 6,055g. Of this, plastic was the most prevalent at 3,329g (or 55% of the total). The next most prevalent type was other artificial objects, averaging 1,547g (26%).

By far the most significant types of marine litter found on beaches were light objects such as plastic and styrene foam, as well as easily fragmented objects such as other artificial objects.

Additionally, looking at average amounts of marine litter per 100 m² broken down by area, Area A had the largest amount at 708 pieces, followed by Area D at 583. Areas F to H had the smallest amount at less than 50 pieces each.

Further, if we break down our results by country, Japan's beaches show a marked trend toward both a greater average quantity and weight of marine litter. Further examination of the cause of this will be necessary, taking into account the effects of litter drifting from one country to another, as well as differences in coastal management systems.

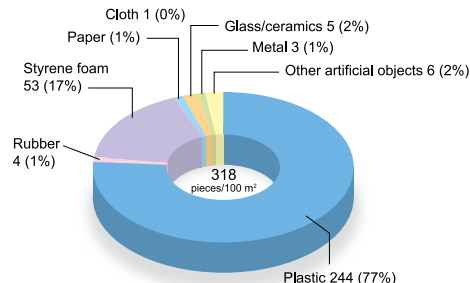


Figure 3. Average number of marine litter per 100 m² (2012)

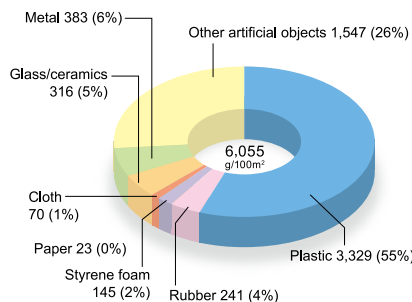


Figure 4. Average weight of marine litter per 100 m² (2012)

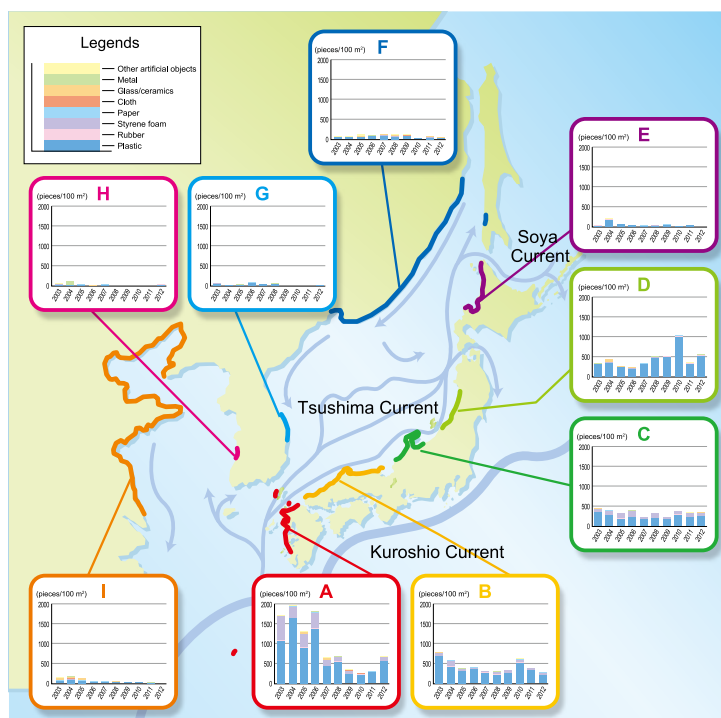


Figure 5. Change in the number of marine litter per 100 m² by area

Table 1. Beaches surveyed in 2012

Area	No.	Location	Surveyed beaches	Number of pieces collected per 100 m ²	Weight of pieces collected per 100 m ²	Participating organizations
A	1	Nagasaki Prefecture	Yoshihama Beach	1,878	41,097	Iki Health Center; Iki City Environmental Sanitation Division; Association of Environmental Problems in Ikinoshima
	2		Shirahama Beach	278	25,336	Tsushima Health Center; Tsushima City
	3		Hamagurihama Beach	301	6,640	Kami-Goto Health Center
	4	Saga Prefecture	Ouganoama Beach	841	9,282	Prefectural Government; Karatsu City; Karatsu City Minato Junior High School
	5	Fukuoka Prefecture	Oguchi Beach	244	2,907	Prefecture's Waste Management Division; Tsukushi Health and Welfare Office; Itoshima City Consumer and Environmental Protection Division; Itoshima City Maehara Elementary School
B	6	Yamaguchi Prefecture	Niinohama Beach	554	1,218	Prefecture's Waste Management & Recycling Promotion Division; Nagato Health and Welfare Center; Nagato City; Nagato City Hioki Junior High School
	7		Waiita Beach	130	4,808	Shimonoseki City Environmental Policy Division; Shimonoseki City Seii Elementary School
	8		Atohama Beach	229	7,680	Shimonoseki City Kogushi Elementary School; Shimonoseki City Environmental Policy Division
	9		Ohama Beach	470	3,152	Hishikai Junior High School; Nagato City Consumer and Environmental Protection Division; Nagato Health and Welfare Center; Parents & Family of Hishikai Junior High School; Local Residents
	10	Tottori Prefecture	Uradome Beach	352	3,646	Prefecture's Recycling Society Promotion Division; Tobu Life Environment Office; Iwami-cho Town Water Supply Division; Iwami Shizen o Aisuru Kai; Iwami-cho Tourist Association; Uratomi Tourist Association; Makidani Community Association; Higashihama Tourist Association
11		Yumigahama Beach	227	682	Prefecture's Recycling Society Promotion Division; Seibu Life Environment Office; Yonago City Environment Division; Sakaininato General Technical high school	
12	Hyogo Prefecture	Keinohama Beach	110	1,027	Prefecture's Environment Division; Toyooka City Koto Elementary School; NPO Tajima Umi no Gakko	
C	13	Ishikawa Prefecture	Chirihama Beach	168	1,730	Prefecture's Waste Management Division; Noto Chubu Health and Welfare Center; Hakui School Board; Hakui City Regional Association; Clean Beach Ishikawa; Kanazawa Seiryu University
	14		Shibuta Beach	273	4,487	Wajima City Najimi Elementary School; Wajima City Environmental Management Division
	15		Shirasaki Beach	616	6,513	Wajima City Environmental Management Division
	16		Shimao/Matsudae Beach	712	4,985	NPEC
	17		Matsudae-hama Beach	486	843	Prefecture's Environment Preservation Division; Takaoka City Environmental Service Division; Takaoka City Ota Elementary School; Ota Senior Citizens' Club; Association of Corporate Executives; NPEC
18	Toyama Prefecture	Ebie Beach	388	390	Prefecture's Environment Preservation Division; Imizu City Ports & Harbors/Investment Promotion Division; Imizu City Environment Division; Imizu City Tomei Elementary School; Association of Corporate Executives; NPEC	
19		Iwasehama Beach	133	130	Prefecture's Environment Preservation Division; Toyama City Environment Preservation Division; Toyama City Iwase Elementary School; Department of Environmental Biology and Chemistry, University of Toyama; NOWPAP Toyama Office; Kintaro Club; Soroptimist International of Toyama; Association of Corporate Executives; NPEC	
20		Miyazaki-Sakai Beach	101	295	Prefecture's Environment Preservation Division; Asahi Town Citizens & Children Division; Asahi Town Asahino Elementary School; NPEC	
D	21	Yamagata Prefecture	Hamanaka Asari Beach	470	1,469	Prefecture's Environment Division; Sakegawa Town Sakegawa Elementary School
	22	Aomori Prefecture	Dekishima Beach	44	1,609	Prefecture's Environment Policy Division; Tsugaru City Environmental Sanitation Division
	23		Fukkoshi Beach	1,235	20,104	Prefecture's Environment Policy Division; Aomori Environmental Management Office; Yokohama Town Citizens Assistance Division; Mameda Land Improvement District
F	24	Khabarovsk Krai	Toki Bay	73	23,618	Khabarovsk Krai Environmental Inspection standardization Division; Wanino Town Public School No. 2; Wanino Town Education Center
	25		Andreyra Bay	1	2	Khabarovsk Krai Environmental Inspection standardization Division; Sovetskaya Gavan District Natural Utilization Division
	26		Obmanyana Bay	68	2,613	Khabarovsk Krai Environmental Inspection standardization Division; Sovetskaya Gavan District Natural Utilization Division; Malsky Town Public School No. 15
	27	Primorsky Krai	Lashkevicha Inlet of Nakhodka Bay A	35	2,081	Primorsky Krai Natural Resources and Environment Preservation Department; Partisansky District Zolotaya Dolina Village Public School Environment Circle
G	28	Gangwon Province	Hajodae Beach	2	96	Gujeong Elementary School
	29		Gyeongpo Beach	2	80	Gujeong Elementary School
	30		Mangsang Beach	3	54	Gujeong Elementary School
H	31	South Chungcheong Province	Chunjangdae Beach	1	37	Daejeon Chungnam Environment Preservation Association
	32		Daechon Beach	2	48	Daejeon Chungnam Environment Preservation Association
	33	South Gyeongsang Province	Sachon Beach	65	21,147	Namhae Junior High School
Total: 3 countries, 18 local governments, 48 beaches						
Average across all surveyed beaches				318	6,055	Total of 1,241 participants

*Note: Areas E and I were unable to participate in 2012.

Spreading Awareness about the Marine Litter Problem in “the North East Asia Regional Environmental Program for the Youth Training through the Experience”

As one of the NEAR Project, Toyama Prefecture and NPEC organize “the North East Asia Regional Environmental Program for the Youth Training through the Experience,” which offers an opportunity for the youth of Northeast Asia to participate in environment-related activities. In 2012, this program was held in Toyama Prefecture with 57 participants from 4 countries. (In 2012, Japan Post provided the partial funding through their New Year’s donation program)

The theme of the program was “Marine Environmental Conservation.” Through beach-cleaning activities and the creation of marine litter art works, the aim was to call upon participants to do what they can to prevent littering, and to spread awareness about the marine litter problem.

1. Dates / Venue

Saturday, August 18 – Sunday, August 19, 2012, in
Toyama Prefecture

2. Participants

57 middle school and high school students from
Northeast Asia
(20 Japanese, 10 Chinese, 13 Korean, 14 Russian)

3. Outline

Saturday, August 18

- a. Presentation of Activities by Participants
- b. Lecture on Marine Environmental Conservation
- c. Lecture: Spreading the Message of Environmental Conservation through Marine Litter Art Works Presented by Professor Toshinobu Goto, Faculty of Art and Design, University of Toyama
- d. Hands-on Environmental Activities (Participants made marine litter art works)
- e. Friendship Gathering

Sunday, August 19

- a. Hands-on Environmental Activities (beach clean-up activity and hands-on seine net activity)
- b. Meeting of the Northeast Asia Youth and Environment Supporters
 - i. Lecture: Thinking About the Marine Environment, Starting with the Bottom of Toyama Bay Presented by Mareo Ota, underwater photographer
 - ii. Presentation of Activities by Participants
 - iii. Creation and Presentation of the Northeast Asia Youth Environmental Declaration 2012



Spreading Awareness through Local Areas

The marine litter problem is one that is solved not just through researches and discussions of the current state of affairs, but through practical measures. However, ordinary individuals still largely do not fully understand the problem itself.

We aim to increase people's understanding of the marine litter problem as the global issue.

By spreading awareness, we hope that people take the first step toward the marine litter problem in their own towns, and that the movement will spread in various localities.

■ Marine Litter Action Forum (Feb. 9, 2013)

To solve the marine litter problem, it is crucial that each and every one of us do what we can to stop littering.

To this end, Toyama Prefecture and NPEC hold forums where individuals can learn about the importance of the sea, and where they are called upon to take practical action to reduce marine litter.

At this year's forum, Northwest Pacific Region Environmental Supporters reported their activities and discussed opinions with other participants to further promote marine environmental conservation.



Presentation on Marine Environmental Conservation Activities



Discussion

■ Spreading Awareness through Events and Activities

Through any opportunity, such as environmental events to help people to understand the marine litter problem, NPEC holds panel exhibitions and marine litter art works exhibitions.

Moreover, NPEC works in association with local schools and groups to set up exhibitions and hands-on workshops of marine litter art works, as well as visiting lectures.



Toyama Environmental Fair 2012 (Oct.20-21, 2012)



ECO Fair at AEON Mall Takaoka (Oct.27-28, 2012)

Let's All Work Together to Make the Sea Clean and Abundant!

Our own coastal waters are connected to the whole world's seas.

Keeping our own nearby sea clean and abundant leads to preserve the environment all around the Northwest Pacific region.

The first step is to take action where you are, working one by one to reduce marine litter to improve the environment for marine life and to develop abundant seas through reforestation and other efforts.

To this end, Toyama Prefecture and NPEC have started Northwest Pacific Region Environmental Supporters system since June, 2011.

Today, there are some 1,400 registered supporters of children and adults from companies, NPOs, and civilian groups, and schools. These Supporters work in their communities, including cleaning beaches and surrounding areas, participating in the survey of marine litter on beaches, revitalizing sea plant beds, and working on reforestation efforts.

We urge everyone to do what they can to help preserve our beautiful and abundant seas.

Northwest Pacific Region Environmental Supporters

The Five Actions^{*}

- 1 Don't litter. Let the society be free of littering.



- 2 Keep rivers, coasts, and local areas clean.



- 3 Join in activities of cleaning, surveys and studies on marine litter and do what you can to solve the marine litter problem.



- 4 Protect the environment for marine life.



- 5 Protect our forests to keep the sea abundant.



Reference Materials

For the survey of marine litter on beaches, the goals are not to simply understand the current state of marine litter on the beach, but also to speculate as to the origins of litter. The litter collect is categorized by type, and then subcategorized by function and original usage. We call upon all participants to refer to the survey results and to put into practice whatever they can do themselves to help reduce marine litter

Survey method

Survey of marine litter

① Preliminary survey

- Conduct basic surveys in advance with regard to intended use of the beach, surrounding conditions, the recent clean-up activity, etc.

② Setting up the survey blocks and subsequent operations

- As a general rule, select survey areas so as to be able to roughly comprehend the state of marine litter on the entire area of the target beach, and set continuous 10×10-meter blocks inland from the water's edge (hereafter referred to as "survey blocks").
- The number of survey blocks should, as a general rule, be 3 in 1 row; however, if it is not possible to allow 3 blocks in 1 row due to insufficient depth of the beach, set multiple rows.
- Plant a stake on each corner of the survey blocks and stretch nylon cord or something similar between each pair of stakes in order to define the survey blocks.
- Collect the litter (artificial objects) from the blocks and classify it for each survey block into the following 8 major categories, count their number, measure their weight, and separate the foreign litter from domestic one judging by printed texts or other evidences.

① Plastic

② Rubber

③ Styrene foam

④ Paper

⑤ Cloth

⑥ Glass/ceramics

⑦ Metal

⑧ Other artificial objects

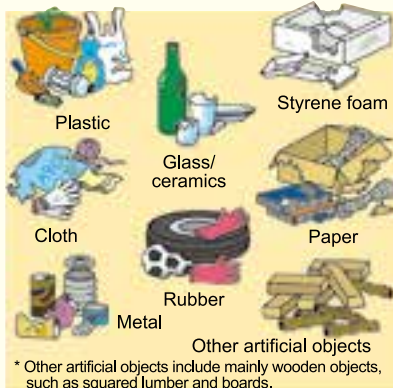
* Other artificial objects include mainly wooden objects, such as squared lumber and boards.



① Set up the survey blocks.



② Pick up and collect marine litter.



③ Sort the litter.



④ Count and weigh the litter, and fill in the table.

*Survey methods are based on the guidelines of Japan Environmental Action Network.

海洋ごみがない海岸はどんなところ？

Can you imagine beaches without litter?



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