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Marine Litter News

From East Asia Civil Forum on Marine Litter

In this volume:

East Asia Civil Forum on Marine Litter

The East Asia Civil Forum on Marine Litter was established in October 2009 at the Marine Litter Summit in Shimonoseki, Japan. The Forum is composed of NGOs from Japan, South Korea, China. We welcome more participation from other NGOs from east asian countries.

Preface

Dear respectful readers from around the world concerned with marine litter,

There has been a rising concern regarding plastic litter entering the ocean. There is also an increase of scientific reports which assess the East and South Asian regions as major sources of plastic marine litter in the global ocean.

However, this volume may stimulate you because we deliver enormous efforts happening in the regions. Monitoring on marine litter in the field and legal instrument has been implemented in the mainland China. Big events were held both in Taiwan and Japan, covering neighboring countries. You can also see the NGOs' efforts to find gaps and effective alternatives for management. Long-lasting campaign by media started in Korea to make a difference in recreational fishing gear which is one of the most difficult types of marine litter to solve. Annual coastal cleanups were highlighted in Bangladeshi, Philippines, and Brunei.

I am very honored to have two special contributors from US and Chile. Mr. Mallos from Ocean Conservancy, US, introduced the recent publication which is a milestone to seek alternatives and fundamental prevention of plastic litter in Asian countries. Dr. Thiel from Chile summarized that the international sampling with kids for the "Our Ocean" conference, one of the biggest events in 2015 held in Chile.

As a researcher and NGO, I am so proud of our three papers just published. Our researches are very closely related to the NGO activities: recent knowledge on efficient policies and better quantitative evaluation with citizen scientists will be delivered to policy makers as well as the public. Additional good news is that a research project on microplastics in Korea was launched.

With truly heart, we welcome three new members of East Asia Civil Forum on Marine Litter: Kewkradong Bangladeshi and ICC Philippine. Kewkradong Bangladesh has organized 'International Coastal Cleanup' in the country since 2006. It is an activity place for youth. Adventure is the key. This is totally nonpolitical, non-violence, and non-profitable organization. ICC Philippines has organized ICC since 1994, reaching out 255,000 volunteers in 2015, which is the second largest in the number of participants in the world. Its goals are to remove trash/debris from beaches and waterways, to increase awareness on the extent of the marine debris problem, to popularize the concept of waste management, to promote a clean, healthy and sustainable coastal environment, to change behaviors that cause pollution.

With love,
Dec 2015,

Sunwook Hong (Ph.D., President of OSEAN)

SAVE THE DATES

- **2016 Clean Ocean Business Expo**
  Date: June 8-12, 2016
  Venue: Taipei, Taiwan
  For more information, please contact Jason HU (jason@wilderness.tw)
- **2016 World Ocean Day Cleanup Events in Mainland China**
  Date: Around June 8th, 2016
  Participants: Volunteers in Mainland China, Hong Kong, Macao, and Taiwan
- **Release of 2015 Beach Litter Monitoring Report in Mainland China**
  Date: Around June 8th, 2016
  Contents: The report is based on the data collected from 72 beach surveys in 12 monitoring sites along the coastline of Mainland China.
- **Start of 2016 Beach Litter Monitoring Program in Mainland China**
  Date: Starts in January, every two month
  Same as 2015, beach surveys in 2016 are conducted every two month in 12 monitoring sites along the coastline of Mainland China.

For more information, please contact Ms. Jingxiu Lu (andrealu0608@hotmail.com)

ACTIVITIES

1. Ocean Currents and Trash Pull Strings - Environmental Groups Join Hands in Cross Straits Memorandum to Combat Ocean Plastic Pollution

By Jason HU, The Society of Wilderness (Taiwan)
jason@wilderness.tw

Recommended Citation:

Jason Hu. (2015). Ocean Currents and Trash Pull Strings - Environmental Groups Join Hands in Cross Straits Memorandum to Combat Ocean Plastic Pollution. Marine Litter News, Vol.6(2): 4-6.

Participants from 47 NGOs, voluntary service units, research centers and the public

The "Clean Oceans 2015 Joint Seminar" on September 14th ended successfully in the National Museum of Marine Science and Technology with a new Memorandum of Engagement on plastic pollution in the ocean. The International Symposium on Cross-Strait included 47 NGOs, voluntary service units, research centers, and the general public, with more than 150 people attending. The participants included experts from Chile, the United States, Japan, Hong Kong, Taiwan and China, speaking about plastic pollution and marine litter monitoring and marine conservation issues. For the first time ever, national experts and representatives spoke about "civic education", "government policy" and "industrial responsibility," and created a three-point consensus for Engagement in a new Cross Straits memorandum for collaboration on plastic pollution issues.

The three main focal points of the *Memorandum of Engagement on Cross Straits Plastic Pollution*, created by the General Assembly, include:

1) A unified challenge for others to join us in reducing plastic pollution in the environment, and the ocean,

2) Increasing users' responsibility to think reusable, not disposable, and

3) To challenge all industries and individuals who use and enjoy the ocean to be better stewards/guardians with the entities at this event.

Organizers of the meeting included the Society of Wilderness (Taiwan), the Shenzhen Mangrove Wetlands Foundation (China), and the National Museum of Marine Science and Technology. The

meeting was sponsored by the Society of Entrepreneurs & Ecology (SEE, a foundation in China formed by entrepreneurs of Taiwan and China).

Under the slogan of "NGO action + Scientific research = the power to protect our oceans"

At the opening ceremony on the 12th, the chairman of the Society of Wilderness, Lai Rong-Xiao, spoke of the impacts of marine litter which are far-reaching, and are common issues facing mankind, hoping that the two sides can overcome geographic barriers between the groups. Huo Liu, Shenzhen Mangrove Wetlands Conservation Foundation (MCF), Head of Cooperation and Development, said “since 2014 the Shanghai Rendu Ocean NPO Development Center jointly launched the *Guardian of the Chinese coastline* project, and had so far set up 12 monitoring points in Chinese coastal provinces, along with the Environmental Protection Agency, and continued to recruit volunteers to join the team". SEE Secretary-General, Wang Li-Min, explained that this indicates that the essence of cross-strait exchanges created by marine environmental groups, and entrepreneurs such as SEE, constitute new ideas which will devote more attention to the effort of marine litter issues, fulfilling both corporate and social forces.

Beach cleanup by all participants after symposium (above and right)

Under the slogan of "NGO action + Scientific research = the power to protect our oceans"

Wu Jun-Ren from the National Museum of Marine Science and Technology, encourages the participants and all sectors of society with the slogan "know the sea, love the sea, and care for sustainable oceans."

The symposium's slogan is "NGO action + Scientific research = the power to protect our oceans" A clean beach is the easiest way to encourage care for the ocean, and marine litter monitoring with more scientific data will bring joint solutions in the region’s waters. In addition to scientific research, public initiatives, policies legislation, and industrial research and lectures, all participants personally went to the Jinshan District, New Taipei City State to conduct a beach litter survey that included identifying the country of origin for some of the litter found, and analyzing the micro plastic pollution density on the beach.

ACTIVITIES

Classification of collected litter

Through statistical analysis of material collected during the beach study, the group found that 93 percent of marine litter to be plastic, of which 20% were plastic bottles originating from China and Taiwan, re-emphasizing the need for cross-strait collaboration on marine plastic pollution.

NGO/NPO participants include:

Taiwan participating organizations:

- Society of Wilderness
- National Museum of Marine Science and Technology
- National Museum of Marine Biology and Aquarium
- Kuroshio Ocean Education Foundation
- Plastics Industry Development Center
- Slow Down, Mr. Plastic
- Taiwan Watch Institute
- Orchid Island Tribal Cultural Foundation
- Penghu Chimei marine ecosystems Care Association
- Taiwan marine environment education promotion association
- Taiwan Environmental Information Association
- Marine Education Center in Taiwan
- New Taipei Water Sports Association
- R.A.R.E. environmental art studio

Chinese mainland participating organizations:

- Society of Entrepreneurs & Ecology (SEE)
- Shenzhen Mangrove Wetlands Conservation Foundation (MCF)
- Shanghai Rendu Ocean NPO Development Center
- North Sea Community Volunteers Association
- Beijing Water Conservation Foundation
- Dalian Municipal Environmental Protection Volunteers Association
- Fujian Provincial Environmental Protection Volunteers Association
- Fujian Green Technology Culture Promotion
- Guangxi Academy
- Guangzhou outlook and love of nature conservation center
- Sanya Coral Reef National Nature Reserve Management Office
- Hainan shellfish and coral Conservation Society
- Hainan Dong Fang Miaoxi Public Service Association
- Hainan Marine Conservation Society
- Birds and insects Wood Conservation Center
- Ningbo Beilun District Volunteers Association
- Panjin City Dawa environmental science, public service association (Green Panjin)
- Panjin Gull Protection Association
- Qinhuangdao City Entrepreneurs Association (urban environment and development laboratories formats)
- Clean Coast volunteer group
- Sanya City, the Blue Ribbon Marine Conservation Society
- Siming District, Xiamen Greencross Environmental Service
- Xiamen Little Gull natural ecological science promotion center
- Shenzhen Blue Marine Conservation Society
- The beautiful coastal town of Shishi City Xiangzhi Environmental Protection Volunteers Association
- Tianjin Eco-city green eco-cultural Association of Friends (Friends of Tianjin Green)
- Fish Conservation and Center for Sustainable Development
- Zhejiang Culture Promotion of green technology
- Wenling City Youth Volunteers Association
- Chinese mangrove Lin Baoyu Union

Other NGO groups:

- Cientificos de la Basura
- Hong Kong Clean Up (Ecozine)
- Japan Environmental Action Network (JEAN)
- Ocean Recovery Alliance
- Plastic Pollution Coalition (PPC)

FOR MORE INFORMATION, CONTACT:
The Society of Wilderness (Taiwan)
Jason HU: jason@wilderness.tw

2. TV show launched, targeting anglers' littering in Korea

By Sunwook Hong, President of OSEAN
oceanook@gmail.com

Recommended Citation:
Sunwook Hong. (2015). TV show launched, targeting anglers' littering in Korea. Marine Litter News, Vol. 6(2): 7-9.

The show's host, Mr. Lee cleaning around the fishing spot

A TV show, Blue Seas, targeting anglers' littering launched on FTV on July the 2nd, 2015. FTV is a TV channel which has served to search unique locations, different species of fish, useful fishing gears and techniques, and fishing competitions for anglers in the whole nation since 2002. The show production team visits popular sites (isles, rocks on seashore, breakwall, etc) and highlights empty drink containers, bait wrappings, other rubbish which are littered by anglers. The show's host, a fishing guru, Mr. Sung Jin Lee starts the show by cleaning around the site and then enjoys fishing. If there are any anglers who voluntarily pick up rubbish together with him, the host gives them stickers saying "Good Angler: Proud of your effort to protect the seas" which can be put on things such as caps, vests, and back packs. Then they visit the same sites again after a month and monitor the change. The producer, Mr. Sung Min An says "It is a big challenge to deal with anglers' littering, bad behaviours, and environmental issues which has never been touched on the TV channel".

In Korea, the number of anglers has been estimated to be 5 to 6 million comprising about 10% of Korean population. Their discarded fishing gears such as monofilament lines, metal hooks, and lead sinkers have seriously impacted marine lives. In 2013, researchers of OSEAN reported that at least 45 cases of 21 species have been impacted by marine debris, the most frequent impacting threat comes from recreational fishing gears, and one of the internationally endangered species, Black-faced spoonbill, *Platalea minor* has also been seriously threatened. Then OSEAN have organized various activities such as publication of books, making a video and series of banners, and organizing a side event of the COP 12 meeting of Convention on Biodiversity. Meanwhile, media coverage of recreational fishing gears and angler's littering has been occasional only. This show is expected to play an important role for making a difference.

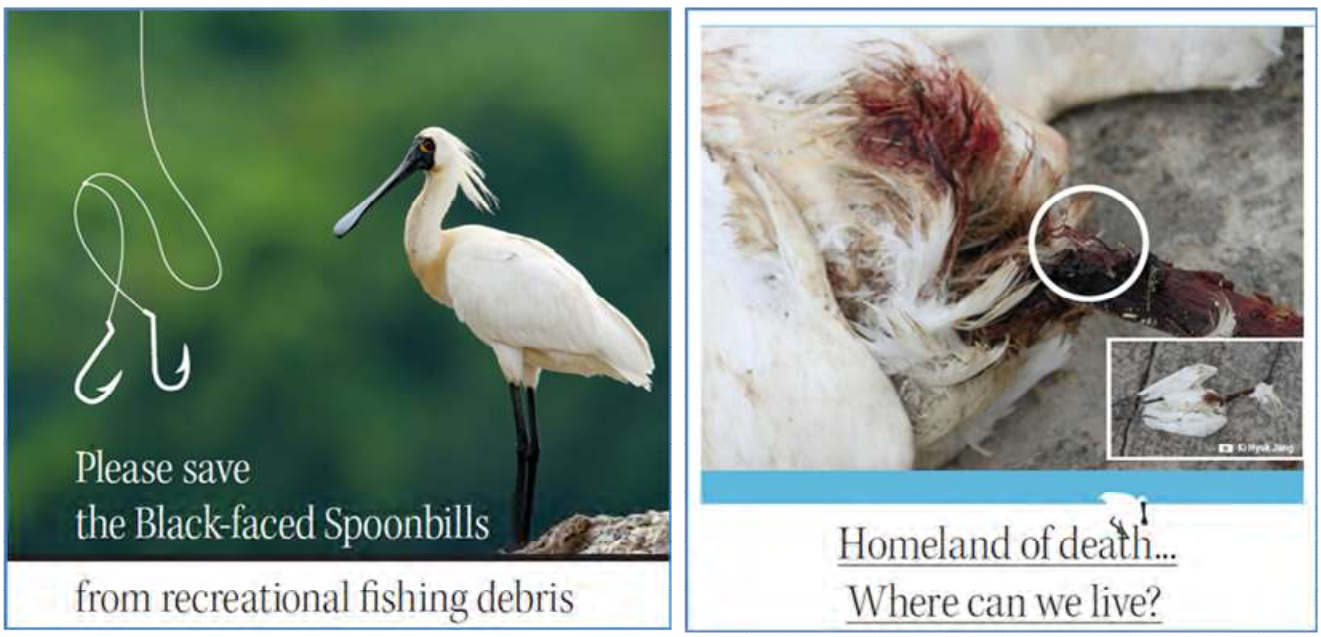
ACTIVITIES

An angler cleaning voluntarily receives a 'Good Angler' sticker.

The monitoring camera set up to watch anglers' behaviours

Dr. Jongmyoung Lee explaining OSEAN's research results and emphasizing the seriousness of recreational fishing gears impacting wildlife

Black-faced spoonbill wading in the water and sweeping their beaks from side-to-side to detect prey (Courtesy: Kisup Lee)



OSEAN's booklet to protect the endangered bird from recreational fishing gears

The premiere entitled "We have already known" seemed to strongly and positively affect viewers. Many of them have posted their experiences, feelings, supports, and better ideas to the online board. It continues to broadcast every other Thursday until summer in 2016, consisting of 25 episodes.

ACTIVITIES

3. Countries' action status on the problem of marine litter - The 13th Marine Litter Summit 2015 held at Goto, Nagasaki, Japan

By Hiroshi Kaneko, Director of JEAN,
HQM07204@nifty.com

Recommended Citation:
Hiroshi Kaneko. (2015). Countries' action status on the problem of marine litter - The 13th Marine Litter Summit 2015 held at Goto, Nagasaki, Japan. Marine Litter News, Vol. 6(2): 10-12.

From October 23 to 25, 2015, JEAN hosted the Marine Litter Summit at Fukue Island in Goto City, Nagasaki Prefecture. This symposium was the 13th as of this year.

In the first attempt, we carried out workshop and group discussions. At the marine litter summit, we always had quite many participants. As such, we were unable to take time for everyone to give presentations. This was to share information regarding where and what kind of actions that participating people were developing and expanding.

Applying the method of World Café and changing members of the tables, self-introductions were made and we shared our opinions and remarks on "good things we find from marine litter". In that group discussion, a presentation speaker joined each group. The speaker explained his/her actions and "things that he/she has attempted to do but has not yet realized", and the group members challenged brainstorming ideas to achieve the goal.

The participants who put effort into the common action of "addressing the problem of marine litter" seemed to have brought home back many ideas and new willingness through the workshop and the group discussions.

For the principal theme of "strengthening the international cooperation", presenters from Republic of Korea, People's Republic of China, and Republic of China (Taiwan) reported the present state of the marine litter issue. The table below shows the non-governmental organizations' approaches to the marine litter problem from their point of view, including Japanese NGOs. The table evaluates how well their approaches moved ahead in the field of monitoring, legal systems, collection and disposal,

Beach cleanup with all participants in the 13th Marine Litter Summit (Oct 23~25, Goto, Nagasaki, Japan)

environmental education and international cooperation.

The assessment criteria was not preliminarily setup, thus, those in the table are subjective views of parties of NGOs – NGO people who attended the Marine Litter Summit. We evaluated our status of progress in each country's area of policy. The purpose of making the table was to use as a reference material in order to bring forward the discussion at the Summit.

The table can show the whole picture: which policy area is progressing or not in the provision for the problems of marine litter in the regions of Japan, China, Korea, and Taiwan. By this work, we are able to recognize what policy area needs to be strengthened specially.

Workshop using the method of World Café

Alternatively, in the policy area that has been successful, we could analyze the reason why it has been so and the countries and regions where the matter is not in progress can consult analysis. In addition, to make national and local governments' differences in approach clear will be a good reference to examine the future allocation of their segregation of duties.

Presentation from overseas participants

Presentation from overseas participants

Group discussion to evaluate current status of marine litter pollution

During the discussion section at the Marine Litter Summit, unfortunately, we were only able to share the whole picture because we could not secure enough discussion time. The councillor, Minister's Secretariat of Japanese Ministry of Environment said, however, that it could be used as NGOs' evaluation to refer.

The work, which is to get an overview of the current state of marine litter, is meaningful while it relates to a number of states in a broad array of the sphere. It would be good if the member who engaged this newsletter to setup an opportunity to do the work together.

ACTIVITIES

Evaluation by workshop participants from Japan, Korea, mainland China and Taiwan: monitoring, legislation, collection, awareness, and international cooperation

Action Status			Monitoring		Legislative System	Collection /Management	Diffusion	Environmental Education	Global Cooperation
			ICC	Other					
Japan	Government	Central	—	△	△	—	X	X	(NOWPAP)
		Local	—	△	X	○	△	△	△
	NGO/NPO		○	△	—	○	△	△	△
China	Government	Central	—	△	○	△	△	△	(NOWPAP)
		Local	—	△	△	△	△	△	△
	NGO/NPO		△	△	—	○	△	△	○
Taiwan	Government	Central							
		Local	—	△	△	○	△	X	X
	NGO/NPO		○	△	—	△	△	○	X
Korea	Government	Central	○	○	△	○	△	△	(NOWPAP)
		Local	△	X	△	△	△	△	△
	NGO/NPO		○	△	X	△	○	○	○

◎ Satisfied ○ Needs Improvement △ Lacking X Nothing has been done

We also had an exchange of views on how we could better address the matters that had not been addressed as much.

JEAN is contemplating holding the Marine Litter Summit in Mie Prefecture, where the G7 leaders summit will be held, in 2016.

4. Quick glance at the national marine litter pollution from 2007 to 2014 in China

By Dongqi Zhang, Research Assistant of Shanghi Rendu
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Recommended Citation:
Dongqi Zhang. (2015). Quick glance at the national marine litter pollution from 2007 to 2014 in China. Marine Litter News, Vol. 6(2): 13-15.

In order to introduce the current temporal trend of the pollution in China, we preliminarily analyzed marine litter data from 2007 to 2014 which have been provided by 'The Bulletin of Marine Environmental Condition in China'. The Bulletin has been yearly issued through the website (www.soa.gov.cn/zwgk/hygb/), providing raw survey data (numbers and weights) of marine litter surveyed on sea surface, sea shore, and seabed nationwide (see www.soa.gov.cn for detailed information

1. Densities of marine litter on sea surface, sea shore, and seabed

The weights of marine litter surveyed on sea surface, sea shore, and seabed are summarized in terms of weight and number in Table 1 and Figure 1. Those of sea shore litter have been apparently higher than those of sea surface and seabed. And those have been on the rise obviously since 2011 and then became a historical high (> 3,000 kg/km^2) in 2014. However, those of seabed litter have shown the downward trend and remained as similar level as those of sea surface litter since 2012. The weights of sea surface litter have been constantly remained at the lowest level since the first survey year.

Table 1. Densities (kg/km^2) of main categories of marine litter surveyed on sea surface, sea shore and seabed from 2007 to 2014.

Densities (kg/km^2)	Category	2007	2008	2009	2010	2011	2012	2013	2014
Sea surface	Wooden	2	9						
	Rubber	1.4							
	Plastic	1.3	4	5					
	Polystyrene foam	1		1					
	Glass		5						
	Total	7.4	22	8	9	10	14	15	20
Sea shore	Wooden	2.7	146	175					
	Rubber								
	Plastic	2.4	35						
	Polystyrene foam	0.5	43						
	Glass			115					
	Fabric			142					
	Total	5.9	296	698	770	1114	2494	1622	3119
Seabed	Total		621	489	90	336	127	36	100

*** Source: 'The Bulletin of Marine Environmental Condition in China'**

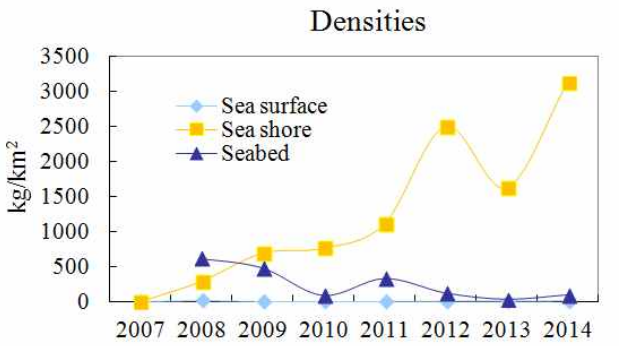


Figure 1. Densities (in total, kg/km^2) of marine litter. Source: 'The Bulletin of Marine Environmental Condition in China'

The high-density areas among sea shore sites were mainly located in tourism and leisure area, aquaculture fishery area, and port shipping area. The most abundant litters in tourism and leisure area were domestic wastes such as plastic bags and plastic bottles. Plastic and expanded polystyrene wastes have been found in larger quantity in aquaculture fishery area.

Table 2. Average number (counts/km^2) of main categories of marine litter surveyed on sea surface, sea shore and seabed from 2007 to 2014.

Average number (counts/km^2)	Categories	2007	2008	2009	2010	2011	2012	2013	2014
Sea surface	Large and extra large blocks		10	20	22	17	37	29	30
	Small pieces		1200	3700	1662	3697	5482	2819	2206
	Total	2900	1210	3720	1684	3714	5519	2848	2236
Sea shore		40000	8000	12000	30000	62686	72581	70252	50142
Seabed		3000	400	200	759	2543	1837	575	720

*** Source: 'The Bulletin of Marine Environmental Condition in China'**

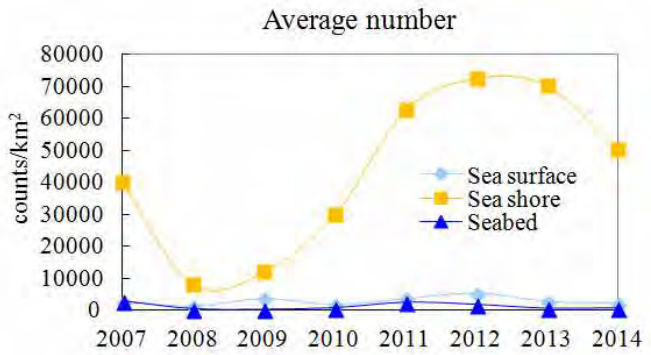


Figure 2. Number of marine (counts/km^2). *Source: 'The Bulletin of Marine Environmental Condition in China'

2. Average number of marine litter on sea surface, sea shore, and seabed

As shown in Table 2 and Figure 2, the average numbers of sea shore litter from 2007 to 2014 have been apparently higher than those of the other compartments. The numbers have increased until 2012 and then slightly decreased. In contrast, litters of sea surface and seabed have been comparatively stable.

3. Composition of marine litter on sea surface, sea shore, and seabed

Table 3 and Figure 3 show relative proportion of the main composition of marine litter (from average numbers) three different compartments. Although there have been missing data, we can crudely compare the main compositions contributing to marine litter.

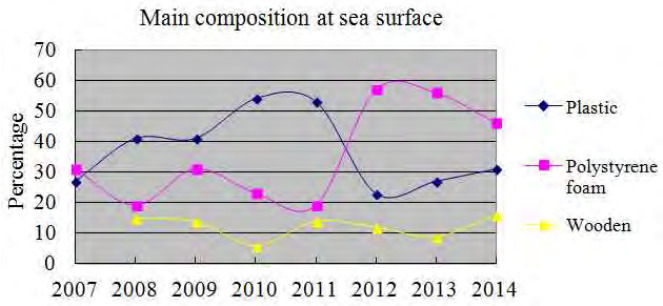
On the sea surface, plastic and polystyrene foam litter showed fluctuation in the opposite directions over the period of 8 years, staying in higher proportions than wood (Fig. 3a). Plastic seems to decrease in recent years whereas polystyrene foam increase during the same years. On the sea shore, plastic marine litter has been the highest over the period and polystyrene foam has taken the second rank. The other composition has been relatively small in proportion (Fig. 3b). The composition showing the highest proportion on seabed litter was plastic as same as in sea shore compartment and seems to increase over the period.

Table 3. Relative proportions of main composition of marine litter surveyed on sea surface, sea shore, and seabed

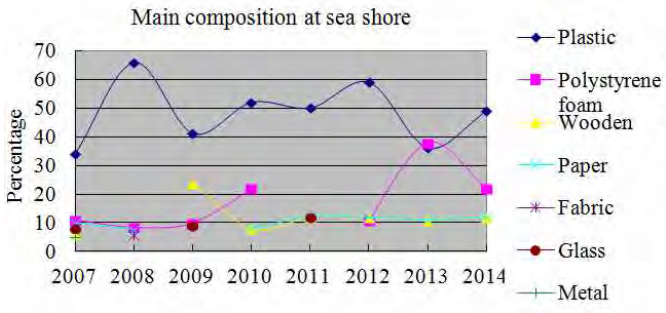
Percentage (%)	Composition	2007	2008	2009	2010	2011	2012	2013	2014
Sea surface	Plastic	27	41	41	54	53	23	27	31
	Polystyrene foam	31	19	31	23	19	57	56	46
	Wooden		15	14	6	14	12	9	16
Sea shore	Plastic	34	66	41	52	50	59	36	49
	Polystyrene foam	11	8.5	10	22		11	38	22
	Wooden	6		24	8	12	12	11	12
	Paper	10	7.6		8	12	12	11	12
	Fabric		5.8						
	Glass	8		9		12			
	Metal	5							
Seabed	Plastic	38	41	61	83	57	74	83	84
	Wooden	19	11						9
	Rubber			9					
	Fabric	14		9					
	Glass	10	15						
	Metal	10	22						

*** Source: 'The Bulletin of Marine Environmental Condition in China'**

(a)



(b)



(c)

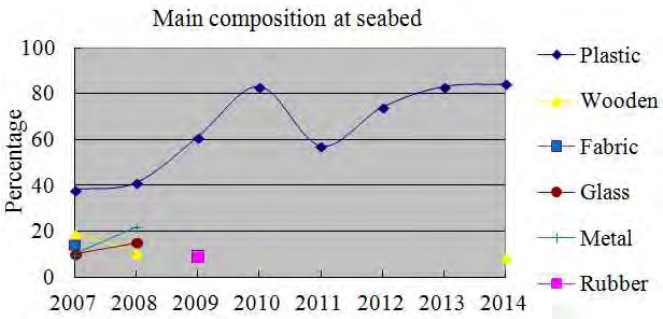


Figure 3. Relative proportions (%) of main composition of marine litter surveyed on sea surface (a), sea shore (b), and seabed (c). *Source: 'The Bulletin of Marine Environmental Condition in China'

Finally we could find that quantities of marine litter have been huge on sea surface, sea shore and sea bed and showed significant increase within some period of time. The percentages of plastic and polystyrene have remained at high level in spite of fluctuation. Due to their durability, plastic litter will be more difficult to deal with without human control. We could not find detailed trends and factors affecting the results in this analysis but much more efforts are needed to understand the situation of marine litter pollution and to efficiently control in China.

SPECIAL REPORTS

5. Too much! International sampling of litter on the beach 2-5th October 2015

By Martin Thiel, Universidad Católica del Norte, Coquimbo, Chile
thiel@ucn.cl

Recommended Citation:
Martin Thiel. (2015). Too much! International sampling of litter on the beach 2-5th October 2015. Marine Litter News, Vol. 6(2): 16-17.

Litter sampling by students in 3m x 3 m quadrant: Chile, Taiwan, South Korea, South Africa, Australia, and Germany

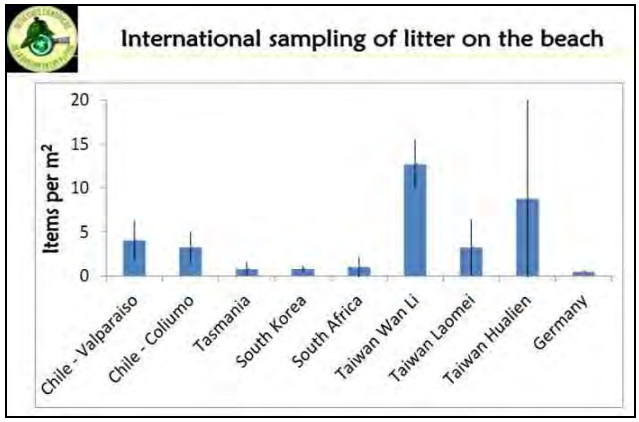
Too much litter on the beach!

This was the conclusion that the 60 participants of the Marine Science Youth Camp in Valparaiso, Chile, reached after analyzing the results of the first-ever international litter sampling! The national Marine Science Youth Camp brought together students from across the country as international leaders convened for the International Conference "Our Ocean". During two days packed with activities, the children also visited a local beach with their teachers to examine the state of marine litter. In this standardized scientific sampling, local students were joined by fellow students from Taiwan, South Korea, South Africa, Australia, and Germany to classify and count all litter in a 3m x 3m quadrant (6 to 60 quadrants per beach). This is the first time that this sampling method, which was developed and is frequently employed by "Cientificos de la Basura" (Litter Scientists) from Chile, has also been used in other countries.

From the global sampling, litter densities ranged from approximately 1 item per square meter to more than 12 items per square meter, most of which were single-use plastic items. The participants of the science camp concluded that the quantity of litter is too much for a healthy ocean and are committed to act in their homes and schools. In addition, the students encouraged

others to join them in this important challenge. Despite the challenge's difficulties, the students expressed their wishes to help each other become better guardians of the oceans along with family members, friends, neighbors, politicians, and businesses to reduce the use of single-use plastic items.

The organizing institutions, participating teachers, and especially the students were excited about this unique opportunity to learn about marine science together, and collaborate with fellow students from other countries. We are planning to repeat this experience in the future, and in particular hope that plastic pollution in the oceans will soon improve, because the students would prefer to explore marine life rather than count litter. The students and this sampling reminded us once more that keeping the oceans clean is everybody's task!



Results from 9 beaches in 6 countries

For more information: www.cientificosdelabasura.cl and www.chileesmar.cl/camp/

For contact: thiel@ucn.cl, Universidad Católica del Norte, Coquimbo, Chile

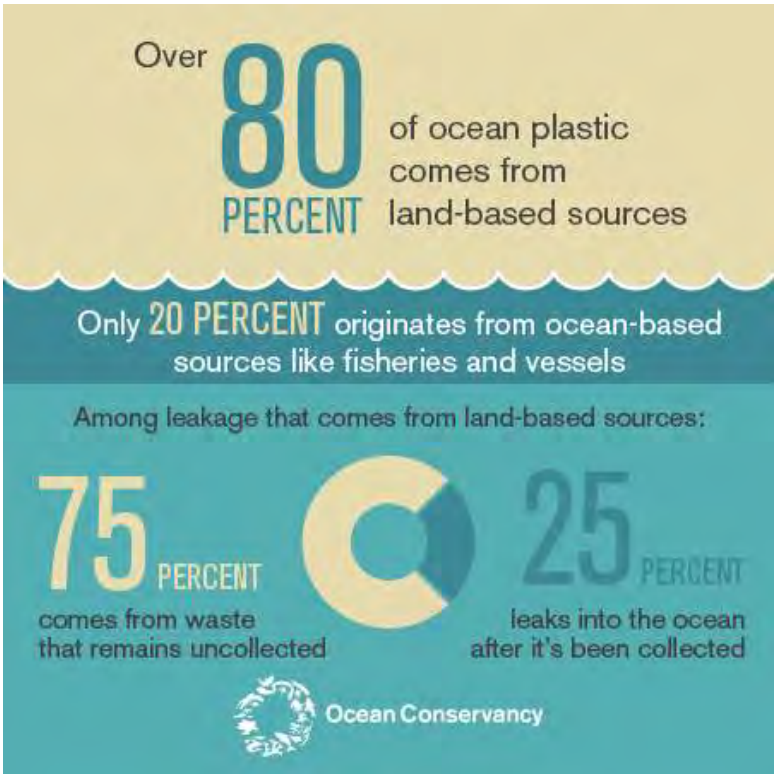
Wish to help students become better guardians of the oceans along with family members, friends, neighbors, politicians, and businesses to reduce the use of single-use plastic items

SPECIAL REPORTS

6. Stemming the Tide: Land-based strategies for a plastic-free ocean

By Nicholas J. Mallos, Director, Trash Free Seas Program, Ocean Conservancy
nmallos@oceanconservancy.org

Recommended Citation:
Nicholas J. Mallos. (2015). Stemming the Tide: Land-based strategies for a plastic-free ocean. Marine Litter News, Vol. 6(2): 17-20.



80 percent of ocean plastic comes from land

Plastic provides many benefits to modern society—it serves to promote public health, quality of life, and economic growth through medical technology, reduced costs associated with the transportation of consumer goods, safe food packaging and better access to clean drinking water. With strong economic growth over the last two decades, many developing countries have made significant strides in reducing poverty and fostering a rapidly growing middle class.

As plastic consumption continues to grow across the globe, an increasing amount of these plastics are finding their way into the ocean. Though the oceans face many issues, plastic is of particular concern, given its persistence and potential to negatively impact wildlife. From Arctic ice to deep sea sediments, our ocean is now littered with plastic debris. Recent research published in *Science* by Jambeck et al. (2015)[1] estimated that 4.8 to 12.7 million metric tons of plastic enter the ocean each year from land-based sources—primarily due to a lack of waste management systems. Without steps taken to manage this waste, it is estimated that there will be 1 ton of plastic in the ocean for every 3 tons of finfish by 2025.

[1]Jambeck et al. (2015). Plastic waste inputs from land into the ocean. Science, 347, p. 768-771.

One Ton Plastic, Three Tons Fish

While all countries with coastal access contribute to the ocean plastics problem, research now shows that more than half of the material leaked into the ocean comes from five rapidly developing countries—China, Indonesia, Philippines, Vietnam, and Thailand, in order of magnitude.[2] These high levels of ocean plastic pollution are largely a result of a fundamental mismatch between the amount of plastic being used and the capacity of the in-country waste management systems to handle these greater influxes of waste.

Through our Trash Free Seas Alliance®, Ocean Conservancy worked with a global research firm and partners from both industry and conservation NGO sectors to build upon the growing body of science in this area to understand the problem in a way that informs solutions. In doing so, we conducted analyses on waste management challenges and opportunities in the priority countries where ocean plastic inputs are currently largest, with intensive in-country interviews and site visits conducted in China and the Philippines. Our report, Stemming the Tide, analyzed where the majority of ocean plastic comes from and how it leaks into the ocean, examines regional differences of pollution pathways,

Dagupan beach bags in Philippines

Dagupan beach bags in Philippines

weighs potential plastic waste reduction solutions and the relevant economics of each.

The report identifies ways this global crisis can be diverted through a set of strategies rooted in stopping plastic pollution in the first place. By implementing a plan that begins at the local level, a 65 percent reduction of plastic pollution can be achieved in these five countries, which would mean a 45 percent reduction of plastics flowing into the ocean globally. There is no "one size fits all" solution; achieving this global reduction requires the

[2]Jambeck et al. 2015, includes Sri Lanka in its estimates of top five countries (at Rank 5); our findings in China and the Philippines suggest that a re-evaluation of plastic leakage quantity for Sri Lanka might reveal a lower ranking than originally believed, with Thailand replacing Sri Lanka in the top five countries.

following mix:

- **26 percent: Close "pollution" points within the collection system** by optimizing transport systems to eliminate illegal dumping, and closing or improving dump sites located near waterways.
- **23 percent: Increase waste collection rates by offering expanded services.** Plastic waste is over twice as likely to end up in waterways and the ocean if uncollected.
- **16 percent: Keep leakage points closed by increasing the value of waste.** Manually sort waste in rural areas to extract high value plastic waste for recycling and evaluate the deployment potential for environmentally and socially responsible conversion technologies to extract low value waste.

In addition we must work with industry to introduce new materials, recovery, and recycling approaches that will allow uncontrolled plastic waste to peak globally by 2030. Assuming that local waste management systems can sustain reductions and continue to increase collection, ocean plastic pollution will continue to decline over subsequent years. However, even a 98 percent collection rate and sophisticated waste disposal alone do not suffice to reduce plastic pollution to zero. This is primarily because the overall quantity of plastic—and therefore the small fraction that is uncollected—will continue to rise in line with growth in consumption. Therefore, improvements to waste management must also be accompanied by reductions in usage of plastic and material redesign if we hope to achieve lasting reductions in ocean plastic pollution.

The health of our ocean - and that of the planet itself - depends upon the collective action we take today to reduce the flow of plastics into the ocean. Industry leaders, NGOs and investors, along with local, national and multilateral government entities, need to jointly define the architecture of such a global program, identify the actors that need to be involved, and determine the funds required to drive this effort as a global flagship initiative that stands for a new, collaborative, and effective way of addressing a global challenge.

Raising Collection Rates 78 percent

Ocean Conservancy has been a leading voice on the impact of marine debris for thirty years through the International Coastal Cleanup®. However, what we have learned in the last year reaffirms that a renewed commitment to stem the tide of plastics in the ocean is desperately needed. If we hope to protect the ocean from plastics, we must look to the land for solutions. While the situation is large and daunting, it is not insurmountable. It is not too late. Now is the time to act.

Report Link:
http://www.oceanconservancy.org/stemmingthetide

OPINIONS

7. A Brief Introduction to Legislation on Marine Litter in China

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1. Legislation history

Legislation on marine litter in China began in 1980s. In 1982, China enacted *Marine Environment Protection Law of People's Republic of China* (revised in 1999; revised in 2013), which was the first comprehensive law on marine environment protection. But the law did not include articles on prevention of marine litter or the concept of 'marine litter prevention'. The importance of marine litter as a marine environmental issue had not been recognized.

During 1983 and 1990, China successively enacted a series of laws and regulations to strengthen legislation on marine litter, including *Marine Traffic Safety Law* (enacted in 1983), *Regulations On the Dumping of Waste at Sea* (enacted in 1985; revised in 2011), *Regulations On Prevention of Environmental Pollution by Ship-breaking* (enacted in 1988), *Regulations On Prevention of Pollution to the Marine Environment by Coastal Construction Projects* (enacted in 1990; revised in 2007) and *Regulations On Prevention of Pollution to the Marine Environment by Land-based Pollutants* (enacted in 1990).

From 1990s, China further elaborated laws on marine litters, with attention paid to prevention and control of land-based marine litter, by enacting the following laws and regulations: *Law of Territorial Waters and Contiguous Zone* (enacted in 1992), *Law on Prevention of Environmental Pollution by Solid Waste* (enacted in 1992; revised in 2004; revised in 2013), *Exclusive Economic Zone and Continental Shelf Law* (enacted in 1992), *Regulations on Environment Protection for Construction Projects* (enacted in 1998), *Sea Area Use Law* (enacted in 2001), *Interim Provisions on Environmental Impact Assessment of Marine Engineering* (enacted in 2004), *Regulations on Prevention of Pollution to Marine Environment by Marine Engineering Construction Projects* (enacted in 2006), *Regulations on Prevention of Pollution to Marine Environment by Vessels* (enacted in 2009) and *Islands Protection Law* (enacted in 2009).

In the 21st century, China has enacted successively Law on Promotion of Cleaner Production (enacted in 2002), Regulations on Prevention of Environmental Pollution to Inland Water Area by Vessels (enacted in 2005), Law on Promotion of Recycling Economy (enacted in 2008) and National Marine Functional Zonation Schema (enacted in 2008). "Relation Schema" is taking place of "Sub Schema" or "Point Pattern", and comprehensive inter-subsystem legislation on marine litter is commencing.

In 2008, the State Council approved the Outline for Planning of National Marine Cause Development, which was the first general planning in the marine field since the foundation of People's Republic of China. As the new milestone of the marine cause, it has important guiding significance for enhancing the comprehensive, coordinated and sustainable development of the marine cause and accelerating the building of a marine power. The Outline puts forward various key tasks including the sustainable use of marine resources, marine environment protection and ecological conservation, planning and coordination of marine economy, marine commonweal service, marine law enforcement and protection of legal rights, international marine affairs and marine technology and education. It also includes supporting measures for administration and coordination, administration according to law, talent strategy, enhancing capabilities, increasing investment and enhancing awareness about marine environment.

However, until now, China has not enacted a special law on marine litter, and rules about it scatters in concerning articles of laws and regulations on marine environment protection, solid waste prevention and environmental impact assessment.

In general, a legal system to prevent marine litter in China has come into its early being, which is led by Environment Protection Law, guided by National Marine Functional Zonation Schema and Outline for Planning of National Marine Cause Development, based on Marine Environment Protection Law, Law on Prevention of Environmental Pollution by Solid Waste, Law on Promotion of Cleaner Production, Law on Promotion of Recycling Economy, National Marine Functional Zonation Schema, Law on Environmental Impact Assessment and Regulations on Prevention of Environmental Pollution to Inland Water Area by Vessels, supported by Regulations on Prevention of Pollution to Marine Environment by Vessels, Interim Provisions on Environmental Impact Assessment of Marine Engineering, and Regulations On Prevention of Pollution to the Marine Environment by Coastal Construction Projects. It is safe to declare that the legal system on marine litter in China, through the more than 40 years of legal system constructing, now has its embryonic form.

2. Introduction to the overall legal system on marine litter

In China, the legal system on marine litter can be divided into macro-system on marine litter and micro-system on marine litter. In order to prevent harm caused by marine litter, the macro-system on marine litter devotes to dividing marine functional zones and planning marine environment protection through coordinated planning and proper distribution. As to the micro-system on marine litter, it prevents harm through establishing measures about environmental impact assessment of construction projects, about rational ship-breaking and against actions such as abandoning and piling up solid waste along shore and beach.

2.1 Macro-system on marine litter

Marine functional zonation schema is "to define dominant function and scope of applicability for sea area according to the natural resource and social attributes of sea area as well as natural resource and environment conditions. It is a fundamental task for marine environment management which, by integrating current state of sea development and the need of social economy development, divides sea area into different areas with special dominant function for different development modes to achieve maximum overall efficiency". Article 12 of *Sea Area Use Law* stipulates, "Marine function zoning plans shall be subject to examination and approval by different levels. The national marine function zoning plan shall be submitted to the State Council for approval. The marine function zoning plan of a coastal province, autonomous region or municipality directly under the Central Government shall, after examination and consent by the people's government of the said province, autonomous region or municipality, be submitted to the State Council for approval. The marine function zoning plan of a coastal city or county shall, after examination and consent by the people's government of the said city or county, be submitted for approval to the people's government of the province, autonomous region or municipality directly under the Central Government where the city or county is located, and reported to the department in charge of marine administration under the State Council for the record." *National Marine Functional Zonation Schema* of 2008 divides China's marine functional zone into five categories: development and utilization area, control and protection area, nature conservation area, special function area and reservation area, which are further divided into ten sub-categories of major marine functional areas including port shipping area, fishery resources utilization and conservation area, tourist area, sea water resources utilization area, sea area for industrial use, sea conservation area, special use area and reservation area, with requirements for conservation in the utilization process and management for each.

Marine environment protection planning is the overall planning in a certain period for marine environment protection, marine environment restoration and utilization, exploitation, protection, restoration and management of various marine resources in the administration area according to marine environment condition of a country or region, marine resources characteristics and the need of national economy development. Article 7 of Marine Environment Protection Law stipulates, "The State shall draw up,

in accordance with the marine functional zonation scheme, national marine environment protection plan and regional marine environment protection plans in key sea areas. Relevant People's Governments of the Provinces, Autonomous Regions and Municipalities directly under the Central Government in the coastal areas adjacent to key sea areas and the departments invested by the law with power to conduct marine environment supervision and administration may set up regional co-operation organization in marine environment protection areas, responsible for the implementation of regional marine environment protection plans in key sea areas, prevention and control of marine environment pollution and marine ecological conservation work."

2.2 Current state of micro-system on marine litter

Assessment system for environmental impact of marine litter, according to different subjects, can be divided into environmental impact assessment for coastal projects, environmental impact assessment for marine projects and environmental impact assessment for ship-breaking factories. Environmental impact assessment for coastal projects applies to organizations responsible for coastal construction projects, which shall, in the feasibility stage of the construction project, conduct scientific research on marine environment, choose an appropriate construction site according to natural and social conditions and compose an environmental impact report, which shall be subject to examination and approval of the department in charge of environment protection administration. The department shall not approve the report without consulting departments in charge of marine, maritime and fishery administration and environment protection department of army. Environmental impact assessment for marine projects assesses whether a marine construction project is in accordance with marine function zonation schema, marine environment protection schema and relative national environment protection standards. The organization responsible for the project shall, in the feasibility stage of the construction project, compose a report of marine environmental impact, which shall be subject to examination and approval of the department in charge of marine administration and for the record and inspection of the department in charge of environment protection. The department in charge of marine administration shall not approve the report of marine environmental impact without consulting departments in charge of marine, maritime and fishery administration and environment protection department of army. Environmental impact assessment of ship-breaking factories requires that ship-breaking organizations must be equipped with or set up oil-intercepting devices, waste oil receiving devices, oil-containing waste water reception and treatment devices or facilities and recycling and disposal site for waste, preventing ship-breaking pollution. Ship-breaking shall not proceed without acceptance certificate authorized by environment protection department which is in charge of approving environment impact report/sheet.

Proper ship-breaking system requires properly breaking up obsolete vessels at ship-breaking ports, dock or beach or on completely on water and preventing marine environment pollution by marine litter. Ship-breaking organizations must be equipped with or set up oil-intercepting devices, waste oil receiving devices, oil-containing waste water reception and treatment devices or facilities and recycling and disposal site for waste, preventing ship-breaking pollution. Ship-breaking shall not proceed without acceptance certificate authorized by environment protection department which is in charge of approving environment impact report/sheet. Ship-breaking as a way to recycle waste, if not managed properly, results in marine environment pollution.

Abandoning and piling up solid waste along shore and beach is forbidden. Article 38 of Marine Environment Protection Law stipulates, "The abandoning, piling up and disposal of mining tailing, waste ores, cinders, garbage and other solid waste along shore and beach shall be conducted in accordance with relevant provisions of Law of the People's Republic of China on the Prevention and Control of Environment Pollution Caused by Solid Waste." Article 40 of Law of the Peoples Republic of China on Prevention and Control of Environmental Pollution by Solid Waste stipulates, "Urban household waste shall, in accordance with the regulations of the administrative departments for environmental sanitation, be placed at designated spots and shall not be dumped, littered or piled up at will." Any organization or person shall following regulations of the administrative departments for

environmental sanitation of People's Government piles up waste at designated spots, and shall not abandon or pile up waste along shore and beach.

Verification of capability to collect waste from vessels. The second subparagraph of Article 62 of Marine Environment Protection Law stipulates, "Those engaged in the business of collection of the pollutants, waste and garbage from vessels and the operation of vessel cabin cleaning and washing must possess corresponding capabilities of pollutant collection and treatment." According to it, any organization engaged in the business of collecting waste from vessels must have capabilities of pollutant collection and treatment corresponding with their tasks. Department of national maritime administration is in charge of verification and approval of the ability and qualification of the aforementioned organizations.

Maintenance of reception facilities. The first subparagraph of Article 69 of Marine Environment Protection Law stipulates, "Ports, docks, loading and unloading spots and shipyards shall, in accordance with relevant regulations, be equipped with reception facilities to deal with vessel-induced pollutants and waste, and shall keep these facilities in good conditions." According to it, all organizations and sites concerning vessel work, including ports, docks, loading and unloading spots and shipyards shall, in accordance with requirements of administrative department of marine affairs and national and sectorial standards, be equipped with proper reception facilities to deal with vessel-induced waste and shall keep these facilities in good conditions. Administrative department of marine affairs is in charge of inspecting and examining equipment, use and maintenance of these facilities.

Proper disposal of urban household waste. Urban household waste contributes a heavy portion to marine litter, a considerable proportion of which results from careless dumping and improper disposal. The fourth subparagraph of Article 16 of Regulations on Urban Household Waste stipulates, "Urban household waste must not be dumped, littered or piled up at will". According to it, any organization or person must not dump, litter or pile up urban household waste at will and must dispose it according to relative provisions.

A series of water area administration measures. Regulations on Prevention of Environmental Pollution to Inland Water Area by Vessels offers general rules on control of litter in water area, the first subparagraph of Article 2 of which stipulates, "All vessels undertaking sailing, anchoring, working and other activities which influence environment of inland water area on inland water area of People's Republic of China are subject to the regulations".

According to it, all types of displacement or non-displacement ships, rafts, seaplanes, submersibles, mobile platforms and other mobile devices on water, when undertaking sailing, anchoring, working and other concerning tasks in water area including rivers, streams, lakes and reservoirs that are available for sailing, must not cause marine litter pollution. The Regulations also set up rules on waste categorization, collection and storage, set up posts for environment supervising administrators, forbids use of non-degradable disposable foaming plastic dinnerware and set up rules of setting placards on litter.

8. The suggestions for improvements of oyster farming in Tainan city

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Styrofoam buoys and rafts for oyster cultivation are common in Tainan, Taiwan

1. We want to continue oyster aquaculture Industry.
2. We want to solve the problem of environmental pollution caused by oyster floating rafts.
3. We want to continue the environment-friendly and eco-friendly side of oyster farming industry
4. We need to help oyster farmers deal with the problem of climate change in order to minimize losses.
5. We hope to extend oyster farming to promote marine leisure activities.
6. We hope to protect our coastline and reduce erosion. through the improvement in the process of oyster farming
7. We hope to improve farming procedures to make them more sustainable.

Two types of oyster cultivation are commonly used in Taiwan. One way is to fix the rafts near offshore, while the other way is to use floating raft system in the coastal areas and estuary. Floating raft system is usually made of Styrofoam or buoy. Two methods of oyster farming are both used in the city of Tainan. Oyster floating raft systems have been used since 1987. There are three production and marketing group in Tainan oyster farming industry. Over 9558 of floating rafts were used in 2014, which were also the largest scale in Taiwan. The output value of floating oyster farming was over 500 million TWD. For the oyster floating constructions, each raft usually use buoy, which consist of 18 Styrofoam on average.

OPINIONS

From March, when annual the harvest season begins, fishers would tow oyster rafts ashore. Meanwhile a lot of Marine debris, such as oyster rafts, bamboo and fragment of Styrofoam start to go ashore. Such marine debris has brought negative impacts on the marine ecological environment. The most severe pollution peak happens from May to June, same time every year.

In 2015, oyster collection began at the harvest season but it came along with fragments of Styrofoam. The coast has been occupied by small fragments of Styrofoam. They caused serious pollution to marine ecological environment. The pollution had not been cleaned up until August. Worse, some fishers broke the rule and proceeded to oyster farm again. Those oyster rafts and Styrofoam buoy had went ashore by typhoon in September. They show that floating rafts and fragment of Styrofoam pollutes the coast for about nine months in one year.

In order to solve this problem, mayor of Tainan City held a forum inviting oyster fishermen and NGOs to discuss and try to find a solution. In recent years, the city government has vigorously advocated oyster farmers to register and reward recycling, and thus amount of recycled increased year by year. However, the recycle process still has some problems. Some people would set fire to the pile of oyster rafts to get the wire on top. Sometimes the Styrofoam would be break into pieces while Excavator does the clean work. And as those fragments spread things got worse.

The municipal government held the second communication session, focused on processing procedure and future perspectives in July 15, 2014. Next year, the municipal government held a communication meeting again, and an officer advocated using a new type of floating raft. But consensus has yet to be reached. To solve this problem, our members have discussed with the Styrofoam material manufacturers to find out the solutions in October 18, 2015. So far, the Government has not shown its enforcement as a mandatory improvement.

1. Short-term goals:

First, restrict the oyster farming schedule: The entire oyster farming procedures should be limited to October to April next year. Oyster cultivation should avoid the typhoon season and collection should be finished before the end of the southwest monsoon, without delay by the end of May.

Second, according to the marine environmental load to restrict the amount of oyster fishermen: control total number of oyster fishermen so that ecological balance can be kept.

Third, management of recycling processes could be improved: Because the materials can’t be completely replaced immediately, the recycle processes become very important. Styrofoam must be manually picked up and classified, and discarded to the designated recycling place (In 2015, the municipal government offered subsidy for each Styrofoam recycling 30 TWD). Oyster rafts should be towed to designated places, since the amount is very large, three areas must have both equipment and manpower to deal with recycle. For the debris along the coast, Environmental Protection Bureau should arrange cleaning cars to remove other debris. Besides, debris removal task must include incinerators, and other environmental protection procedures.

The recycling processes should be improved, avoiding secondary pollution.

Fourth, Styrofoam material replacement: The municipal government should make an announcement and prohibit the use of Styrofoam within two years. Besides, government should stringently demand that oyster fishermen use environmentally friendly floating tools.

If 200,000 a year Styrofoam meter, oyster farmers after deducting the original acquisition cost, the extra cost to 1.5 times the count, the extra funds of about 60 million, the government is very easy assist handle.

There were 200,000 blocks of Styrofoam used in oyster farming in a year, after subtracting the fishermen original cost, it approximately equals to 60 million. It’s enough for municipal government to deal with this issue. There are many ways to do so, such as low-interest loans, or setting up a fund to provide financing, or applying central subsidies to enterprises or fundraising. For the three production and marketing groups, government can help them replace the Styrofoam buoy.

2. Midterm goals:

The abandoned oyster shed can be used as an ecological floating island for the restoration of marine ecology.

Also, the unused oyster rack can be stacked and bundled to form an ecological floating island for ecological diversification purpose and the restoration of marine ecology.

3. Long-term goals:

Persistent oyster shed and tourism fishery development. In addition to the use of disposable oyster shed, we can expand the plan to tourism fishery which is more like fixed fishing and more persistent. Like fixed fishery, it has higher investment costs. But when combined with sightseeing, tourism, water and underwater activities, its value is even higher than that of oyster cultivation.

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ACTIVITIES

9. One World, One Ocean - 2015 Hilo Symposium on Marine Debris & Tsunami Driftage held in Hawaii

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World Ocean Collective to keep the communication among regions affected by 2011 Tsunami in Fukushima, Japan (Photo: Hawaii Wildlife Fund)

The 2011 Tsunami might have created an immense amount of debris in the ocean, but it also started created a legacy with our international relationships between the countries around the Pacific Ocean. The debris that traveled across the Pacific made us realize how connected we all were, and how we all needed to work together to tackle the issue of marine debris.

World Ocean Collective was created right after Natori symposium hosted by JEAN in 2014 to keep the communication flowing. Members included representatives from Japan, BC Canada, Washington, and Hawaii. We asked ourselves what we could do as a collective mind to keep the momentum strong. We knew how important it was to discuss the issue of addressing marine debris in person from our experiences. We all knew instantly that we needed to coordinate another opportunity to bring these partners together. That's when the idea of scheduling another international symposium was proposed.

"2015 Hilo Symposium on Marine Debris & Tsunami Driftage: Dialogue on marine debris removal prevention, disaster recovery and making connections around the North Pacific" was hosted by Hawaii Wildlife Fund and World Ocean Collective on December 5th.

Marine Debris Art Display (Photo: Hawaii Wildlife Fund)

Sampling of small plastics

Cleanup group shot (Photo: Hawaii Wildlife Fund)

Something from a boat bathroom (?) washed ashore (Photo: Hawaii Wildlife Fund)

We exchanged information with representative from Hawaii, Washington, Oregon, and Japan to achieve these four main goals.

1. Share effective recovery and removal techniques;
2. Spread the word about tsunami and disaster preparedness;
3. Share updates and new information about ongoing marine debris prevention work; and
4. Make connections and work together to reduce the amount of marine debris in our world’ s oceans and waterways.

Followed by the symposium, 50 of us visited Kamilo Point to collect over 1,000 pounds of marine debris. During the clean up, we recognized familiar debris from Japan and around Asia. We were able to give information on where it might have originated from and what country the Oriental characters represented.

Personally, I really think it doesn’t matter where it comes from. Marine debris is an international issue and we all have to take action on it locally and make some changes. The more I spend time working on the issue of marine debris, the more I become aware of my natural environment and my lifestyle. It is our personal responsibility to change the culture of disposable plastics, but sometimes being new to this marine debris problem I need a little help. Attending these symposiums, and making new friends makes you realize that you are not the only one out there, and there are always enthusiastic people trying to make a change around the world.

Like my good friend said, “ To the Sea, for the Sea”
United we stand, one world one ocean.

CLEANUP HIGHLIGHTS

10-1. Coastal Cleanup in St. Martin's Island, Bangladesh

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Before cleanup shot under the slogan "Sea Change"

Kewkradong Bangladesh is the country coordinator for International Coastal Cleanup, partnering with Ocean Conservancy USA, which is the world' s largest program on marine debris. For the last 10 years Coca-Cola and Banglalink have been supporting us in keeping the advocacy program running in St. Martin' s Island and Cox' s Bazar, Bangladesh along with the global partnership with Ocean Conservancy USA. In our past 4 cleanups only in St. Martins Island have we picked more than 4000 kilograms of marine debris with the help of 2000 local and visiting volunteers.

St. Martin's Island is a small island (only 8 sq. km in area) in the northeastern part of the Bay of Bengal, about 9 km south of the tip of the Cox's Bazar-Teknaf peninsula, and forms the southernmost part of Bangladesh. It is famous for specimen of corals and rich bio-diversity. It is the one and only place in Bangladesh that has the specimen of corals.

Major Acts:

Advocacy campaign: This year, person-to-person advocacy campaign will be launched in the island. Maximum number of tourist visits during the month of November and December. So our goal is to reach out to more than 7000 tourists and local inhabitants of the island. This program will start at the ferry and ferry terminal of the Island. After reaching on the island, volunteers will reach out to the visiting tourist, hotels and other public places.

Campaigns to stop littering on streets

Session: Marine debris 101

In this session, participating selected volunteers will gain a hands-on experience about marine debris and how to control them. Moreover, impacts and outcomes of marine litters will also be covered in this session. This session will also help them learn how to organize small cleanups.

Cleanup: This year, along with the cleanup program combining visiting volunteers and locals, school children will be observed.

Person-to-person advocacy campaign, reaching 6000 tourists and locals

Placing debris receptacles: Number of debris receptacles will be placed in the accommodation facilities and shops for greater visibility of the campaign. Areas including beach, shops, schools and hotels will be prioritized.

Engaging with local government regarding debris-dumping location: We have already had a positive meeting with local authorities regarding spotting a common location for dumping debris. We will launch a pilot this year and will find out a sustainable solution for debris.

Expected results:

- Increase in participation of local volunteers
- Reduction in the number of floating debris
- Communication (semi permanent) materials on marine debris targeting tourists
- Behavior changed regarding debris among locals
- Sustainable debris management by locals
- Less pollution of water by land based debris
- Volunteers joining this cleanup initiative at St. Martin are expected to learn the issue of Marine debris, its impact and how to reduce the pollution. This group of volunteers is going to play a key role in spreading this message among peers and other networks.

Outcomes:

Since the land-based debris is the prime cause behind pollution of water and marine environment, this program aims to advocate for the behavioral change of the dwellers and tourists of St. Martin. Moreover, educating locals and visiting tourist on the effect of marine debris with communication material as well as reaching out through volunteers and placing trash bins, will enhance the debris management for the betterment of local and global environment.

Engaging local govt. will certainly help this advocacy campaign to sustain the whole program as well as keep the floating and land based debris more organized by arranging a place for dumping debris.

Volunteers picking up trash

CLEANUP HIGHLIGHTS

10-2. 2015 Coastal Cleanup Results in Philippines

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Baywalk Manila Bay area, Manila

People, Pounds, Miles

A total of **255,104** cleanup volunteers in the Philippines made the 30th International Coastal Cleanup a huge success. This is a 41% increase in volunteer turnout from last year's 107,695. Officially held on September 19, 2015, people from different sectors converged along beaches, waterways, rivers, and coasts to take part in this global effort for the coastal and marine environment. They traversed an estimated total of **722.55 miles** (1,162.83 km), filled about **46,191** sacks of trash with an estimated weight of **638,132.4 pounds** (289,451.52kg) or 289.45 metric tons (Figure 1). Huge volumes of participants seen during the ICC came from the private and public educational sector and from the national and local government sector.

Results showed **254,500** volunteers conducted beach/shoreline and waterway cleanups; **296** divers participated in the underwater cleanup and **308** volunteers did the surface cleanups aboard watercrafts (Table 1). Underwater cleanup, popularly known in the Philippines as "Scubasurero" yielded **2,301.6 pounds** (1,044 kg) of trash over **5.3 miles** (8.53 km) of underwater areas located in Cebu, Albay, Iloilo, La Union, Davao Del Norte, Mindoro Occidental, Mindoro Oriental, South Cotabato and Zambales provinces.

The 2015 ICC has recorded a total of **48** participating provinces with **1,085** cleanup sites or barangays (villages). The province of Zambales, located in Central Luzon Island, Philippines at: $15^0$20' N $120^0$10' E once again, topped other provinces with

Table 1 - PPM by Cleanup Category

Cleanup Category	Total People	Adults	Children	Bags	Pounds	Miles
LAND	254,500	214,995	39,505	45,833	634,497.00	716.13
UNDERWATER	296	295	0	177	2,301.60	5.30
WATERCRAFT	308	288	20	181	1,333.80	1.12
	255,104	215,578	39,525	46,191	638,132.40	722.55

Cebu (9,373), Cavite (6,656), Antique (5,709), Catanduanes (5,441) and Pangasinan (5,427) (Figure 2). Olongapo City, including the Subic Freeport Zone of the Subic Bay Management Authority (SBMA) in the province of Zambales, topped the cities and municipalities with **30,936** volunteers. A list of all provinces who actively participated is shown in Table 2.

Figure 1 - People, Pounds, and Miles of ICC Philippines

Figure 2 - Top Ten Provinces in the 2015 ICC

Debris Breakdown

A total of 5,392,915 debris items were collected by dedicated volunteers from land, underwater and watercraft cleanups. They found all kinds of debris items - from cigarette butts, plastic bags, food wrappers, takeout/away containers, plastic straws, fishing gears, plastic/foam packaging, and disposable diapers to peculiar items like umbrellas, shower curtains, toothbrushes, sofas, and underwear. Most likely to find debris items comprised 77% of the total debris collected while the remaining 23% are composed of fishing gear, personal hygiene and other trash (Table 3). A detailed list of all debris items collected during the 2015 ICC is presented in Table 5.

Top Ten Debris

The "top ten" or the most prevalent debris items recorded in all the cleanups constitute 63% of the total debris collected. Debris items in the "top ten" list are the same as last year with food wrappers and cigarette butts still the leading debris. Straws/stirrers rose from the 5th to 3rd rank while takeout/away containers (plastic) also went up by one rank. Grocery bags, other plastic bags, and plastic lids went down while plastic bottle caps, beverage bottles (plastic), and cups & plates (plastic) remain on the same ranks. Grocery/other plastic bags, cigarette butts and straw/stirrers are considered the most prevalent debris for six consecutive years (2010-2015).

CLEANUP HIGHLIGHTS

Table 3- Total Debris Collected by Category

Category	Land	Underwater	Watercraft	Total Items	Total %
Most Likely to Find Items	4,160,783	2,075	174	4,163,032	77.19
Fishing Gear	97,512	706	15	98,233	1.82
Packaging	252,988	90	11	253,089	4.69
Other Trash	306,788	480	67	307,335	5.70
Personal Items	135,068	138	9	135,215	2.51
Tiny Trash (less than 2.5 cm)	435,854	153	4	436,011	8.08
TOTAL	**5,388,993**	**3,642**	**280**	**5,392,915**	**100**

Table 4 - Top Ten Debris for 2015 ICC - Philippines

DEBRIS ITEM	Total Items	% Total	% from Total Count
1) Food wrappers (candy, chips, etc.) butts	1,208,950	35.62	22.41
2) Cigarette butts	420,258	12.38	7.79
3) Straws, stirrers	340,029	10.02	6.30
4) Other plastic bags	306,287	9.02	5.68
5) Grocery bags (plastic)	271,062	7.99	5.03
6) Bottle caps (plastic)	220,919	6.51	4.10
7) Take out/away containers (plastic) butts	192,827	5.68	3.58
8) Beverage bottles (plastic)	148,874	4.39	2.76
9) Lids (plastic)	144,553	4.26	2.68
10) Cups & plates (plastic)	140,545	4.14	2.61
Total Top Ten Debris	**3,394,304**	**100.00**	**63**
Total Debris Items	**5,392,915**		

Table 2 - List of Participating Provinces

Province	People	Adults	Children	Bags	Est. Wt (kg)	Est Dist. (km)
1. Zambales	89062	89062	0	8,902	61,407.48	372.10
2. Batangas	64960	38180	26780	9,024	30,805.50	191.12
3. Metro Manila	22126	21401	724	13411	91406.01	33.64
4. La Union	11495	11039	456	2,891	18990.4	139.4
5. Cebu	9373	9287	86	1,324	12,256.25	51.10
6. Cavite	6656	6199	457	1,201	6,583.90	50.15
7. Antique	5709	1457	4252	512	5539	16.1
8. Catanduanes	5441	5135	306	477	3377.9	25.15
9. Pangasinan	5427	4690	737	692	5,400.45	59.95
10. Leyte	5097	4989	108	1,547	1,397.66	10.85
11. Zamboanga Del Sur	4719	2692	2027	346	2,125.50	9.50
12. Iloilo	4207	3985	222	1,085	8,325.75	44.57
Surigao Del Sur	2708	1918	790	280	1,508.45	24.50
Negros Occidental	2656	2056	600	535	11,154.00	9.50
Aklan	2554	2554	0	677	2,495.19	14.00
Davao Del Sur	2551	2116	435	383	2,626.00	24.20
Cagayan	1594	1388	206	175	729.50	14.60
Zamboanga Del Norte	1106	1102	6	433	3,031.00	3.42
Bulacan	687	597	90	165	825.00	0.95
Surigao Del Norte	606	606	0	152	4,188.90	7.75
Albay	560	559	0	143	551.50	1.50
Samar	491	491	0	141	30.33	5.00
South Cotabato	491	491	0	298	5,730.00	2.50
Bataan	489	489	0	129	524.53	1.75
Tawi-tawi	474	109	365	121	910.00	1.25
Basilan	447	379	68	30	170.00	9.75
Palawan	407	297	110	220	810.75	5.55
Mindoro Oriental	365	272	93	157	1,890.00	2.60
Quezon	353	225	128	5	25.00	2.00
Capiz	350	350	0	80	358.00	0.20
Cordillera	301	301	0	55	289.00	2.40
Davao Del Norte	215	151	64	51	330.00	6.00
Nueva Viscaya	215	215	0	86	430.00	4.00
Ilocos Sur	192	46	146	65	429.00	2.00
Agusan Del Norte	181	181	0	25	375.00	3.00
Camarines Norte	147	29	118	23	146.00	1.10
Sulu	123	86	37	47	260.00	0.30
Zamboanga Sibugay	117	46	71	150	1,000.00	1.00
Rizal	95	95	0	33	289.32	1.00
Nueva Ecija	88	56	32	7	45.00	0.50
Davao Oriental	62	62	0	50	300.00	0.80
Cotabato	49	39	10	21	148.00	0.25
Masbate	48	48	0	5	20.00	0.03
Pampanga	35	35	0	20	80.00	0.10
Pampanga	31	31	0	0	0.00	0.20
Mindoro Occidental	19	19	0	1	7.25	1.00
Laguna	15	14	1	6	30.00	0.50
Romblon	9	9	0	10	100.00	1.00

Table 5 - List of Debris Collected 2015 ICC

Categorized Items	Land	Underwater	Watercraft	Total Items	% of Total
Most Likely to Find Items					
cigarette butts	420193	43	22	420258	10.10
food wrappers (candy, chips, etc.)	1208451	478	21	1208950	29.06
take out/away containers (plastic)	192747	72	8	192827	4.63
take out/away containers (foam)	124714	33	7	124754	3.00
bottle caps (plastic)	220809	85	25	220919	5.31
bottle caps (metal)	112632	66	12	112710	2.71
lids (plastic)	144533	18	2	144553	3.47
straws, stirrers	339985	20	24	340029	8.17
forks, knives, spoons	95560	91	3	95654	2.30
beverage bottles (plastic)	148676	188	10	148874	3.58
beverage bottles (glass)	99322	354	6	99683	2.40
beverage cans	73512	136	9	73657	1.77
grocery bags (plastic)	270858	192	12	271062	6.51
other plastic bags	306052	229	6	306287	7.36
paper bags	73871	30	4	73905	1.78
cups & plates (paper)	101912	12	1	101925	2.45
cups & plates (plastic)	140519	25	1	140545	3.38
cups & plates (foam)	84187	3	1	84191	2.02
Category Totals	**4,158,534**	**2,075**	**174**	**4,160,783**	**100.00**
Fishing Gear					
fishing buoys, pots & traps	28966	10	10	28986	29.73
fishing net & pieces	27031	13	2	27046	27.74
rope (1 yd/m=1 piece)	24339	224	2	24565	25.19
fishing line(1 yd/m=1 piece)	16455	459	1	16915	17.35
Category Totals	**96,791**	**706**	**15**	**97,512**	**100.00**
Packaging Materials					
6-pack holders	16757	0	0	16757	6.62
other plastic/foam packaging	97324	25	4	97353	38.48
bleach,etc.)	49590	26	0	49616	19.61
strapping bands	28516	25	2	28543	11.28
packaging/wrappers	60700	14	5	60719	24.00
Category Totals	**252,887**	**90**	**11**	**252,988**	**100.00**
Other trash					
etc.)	5832	0	2	5834	1.90
balloons	15321	0	0	15321	4.99
cigar tips	62393	0	18	62411	20.34
cigarette lighters	37942	24	17	37983	12.38
construction materials	46107	188	3	46298	15.09
tires	15465	14	5	15484	5.05
fireworks	3182	0	0	3182	1.04
cloth/clothing	46229	185	8	46422	15.13
shoes/slippers	57254	53	8	57315	18.68
toys	16516	16	6	16538	5.39
Category Totals	**306,241**	**480**	**67**	**306,788**	**100.00**
Personal Hygiene					
condoms	6041	0	0	6041	4.47
diapers	82387	105	6	82498	61.08
syringes	8681	0	0	8681	6.43
applicators	37812	33	3	37848	28.02
Category Totals	**134,921**	**138**	**9**	**135,068**	**100.00**
Tiny trash less than 2.5cm					
Foam pieces	98820	1	3	98824	22.67
Glass pieces	59672	119	1	59792	13.72
Plastic pieces	277205	33	0	277238	63.61
Category Totals	**435,697**	**153**	**4**	**435,854**	**100.00**

10-3. Coastal Cleanup in Brunei

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Volunteers on Meragang Beach pose for a photo with the Site Captains before the start of the cleanup

BOTTLES, cigarette butts, wrappers and even tyres were collected, bagged and disposed of from the sandy shores of Telisai and Danau beaches in Tutong in the morning of 19th September 2015.

It was also a similar sight at the Silver Jubilee and the Perkelahan Lumut beaches in the Belait district as well as Muara and Meragang beaches in the Brunei-Muara district.

In total, 2,970kg of trash was collected in the three districts, with 1001kg from Telisai and Danau beaches; 569kg and 641.3kg from Muara and Meragang beaches respectively while the Belait beach and Lumut coast collected 125kg and 614.5kg respectively.

The massive simultaneous cleanup effort in the districts - which is the second of its kind to be held - was jointly organised by Brunei Shell Joint Ventures (BSJV), Shell Deepwater Borneo (SDB) and Brunei Gas Carriers (BGC) to commemorate the International Coastal Cleanup 2015 (ICC2015).

A total of 758 volunteers - comprising government officials and personnel such as the district offices in all three districts, the Royal Brunei Navy, grassroots leaders, companies and schools such as Perdana Wazir Secondary School, Cosmopolitan College of Commerce & Technology and IBTE Sekolah Vokasional Nakhoda Ragam (SVNR) as well as members of the public - joined members of the organisers who included BSP Managing Director

CLEANUP HIGHLIGHTS

Hj Kamaludin Hj Bungsu, BSP's Development Manager Jan Willlem Alber Van Der Lee,Managing.

Director of Brunei LNG, Mohamad Damit and Managing Director of Brunei Shell Marketing Pg Shamhary PD Hj Mustaphaw in combing the beaches for trash.

In a statement, the effort encourages the importance of keeping beaches clean from rubbish as well as cultivating the spirit of volunteerism and gotong-royong (mutual cooperation) among staff, youth and members of the local communities.

Volunteers combing Muara Beach for trash (Photo - Brunei Times)

In an interview with The Brunei Times, Mohammad Amir Najmi Hj Moksin, 19, the President of Institut Teknologi Brunei Society Petroleum Engineer (ITB-SPE) Student Chapter, who saw and responded to the ad of the drive on social media, said, "I just thought this would be a good chance for us to perform community outreach programmes…especially widening your social horizon and other perspectives in keeping your surroundings habitable."

Meanwhile, Nur Anati Ramizah, from Meragang Sixth Form Centre, on the other hand, said it was important to keep the beaches clean, especially for the image of the country. "We don't want to represent Brunei beaches as dirty," said the 16-year-old who is a member of the Eco Club of the school. Amir Najmi added, "Now is the time to educate the public to just pick up trash on the ground and put it where it belongs."

However, it's not all about picking up trash as each volunteer were given a form from the Ocean Conservancy, a non-profit environmental advocacy group based in the US, to tally the number, type and consistency in types of trash that they collect.

"The data collected will help determine the patterns of trash disposal, its source, the consistency and will help in identifying the common causes of trash disposal and address it in the future," said one of the volunteers from the oil and gas companies, Suriani Garip.

International Coastal Cleanup Country Coordinator for Brunei Darussalam, Alan Tan weighing trash collected by the volunteers and loading them onto a truck to be brought for recycling

RESEARCHES

11. Compare efficiency among representative policies to collect marine debris from sea in South Korea

By Jongmyoung Lee, Chief Scientist of Korea Marine Litter Institute, OSEAN
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Emergy Evaluation of Management Measures for Derelict Fishing Gears in Korea

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A research paper was recently published in Journal of Ocean Science Journal, which evaluated three policy measures targeting floating and sunken fishing nets, ropes, and traps (mainly plastic) in South Korea: Cleanup-using-ships program (CL), buy-back (BB) program, and floating reception barge (FB) program (Fig. 1).

The authors compared the emergy input to collect 1 ton of DFGs among three measures. Emergy means "the available energy of one kind previously required directly and indirectly to make a product or service" which was defined by Howard T. Odum (1996), a pioneer on ecosystem ecology and is useful tool to compare different items.

The first author, Dr. Sunwook Hong says "This is the first evaluation of relative efficiency of governmental measures. The CL and BB where the government has invested majority of available resources required 4.4 and 3.6 times that of the FB. We hope the government should significantly change toward preventive alternatives using the result as a reference material."

Cleanup-using-ships (CL) (left: courtesy, KFPA), buy-back (BB) (middle: courtesy, MLTM), and floating reception barge (FB) (right: courtesy, MLTM)

RESEARCHES

12. Is microplastic marine debris abundant where meso-plastic debris are numerous?

By Sunwook Hong, President of OSEAN
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Arch Environ Contam Toxicol (2015) 69:288–298
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CrossMark

Distribution and Size Relationships of Plastic Marine Debris on Beaches in South Korea

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Is microplastic marine debris abundant where meso-plastic debris are numerous? The researchers of OSEAN and KIOST answer "Yes" in the newly published research paper in the special volume of Archives of Environmental Contamination and Toxicology. Enormous efforts have been taken about macro marine debris (> 25mm) in the coastal areas and oceans on earth. Researchers' interest on small-sized marine debris has boomed over the recent 5 years and their research targets have become smaller. However, smaller sized debris needs more investment of money, equipments, and labors. This paper suggests that meso-sized debris can be easily surveyed without expensive equipments or huge investment of labor and may surrogate micro-sized debris pollution.

<Abstract>

The characteristics of the distribution of plastic marine debris were determined on 12 beaches in South Korea in 2013 and 2014. The abundances of large micro- (1–5 mm), meso- (5–25 mm), and macroplastics (>25 mm) were 880.4, 37.7, and 1.0 particles/m2, respectively. Styrofoam was the most abundant debris type for large microplastics and mesoplastics (99.1 and 90.9 %, respectively). Fiber (including fabric) was the most abundant of the macroplastics (54.7 %). There were no statistical differences in the mean numbers and weights of plastic debris among three beach groups from west, south, and east coasts. No significant differences were detected between the abundances of beached plastics in high strandline and backshore for all three size groups. Spearman's rank correlation was used to determine the relationships between the three debris size classes. The abundance of large microplastics was strongly correlated with that of mesoplastics for most material types, which suggests that the contamination level of large microplastics can be estimated from that of mesoplastics. As surveying of smaller particles is more labor intensive, the surveying of mesoplastics with a 5-mm sieve is an efficient and useful way to determine "hot-spots" on beaches contaminated with large microplastics.

13. How much plastic debris ends up in the ocean every year?

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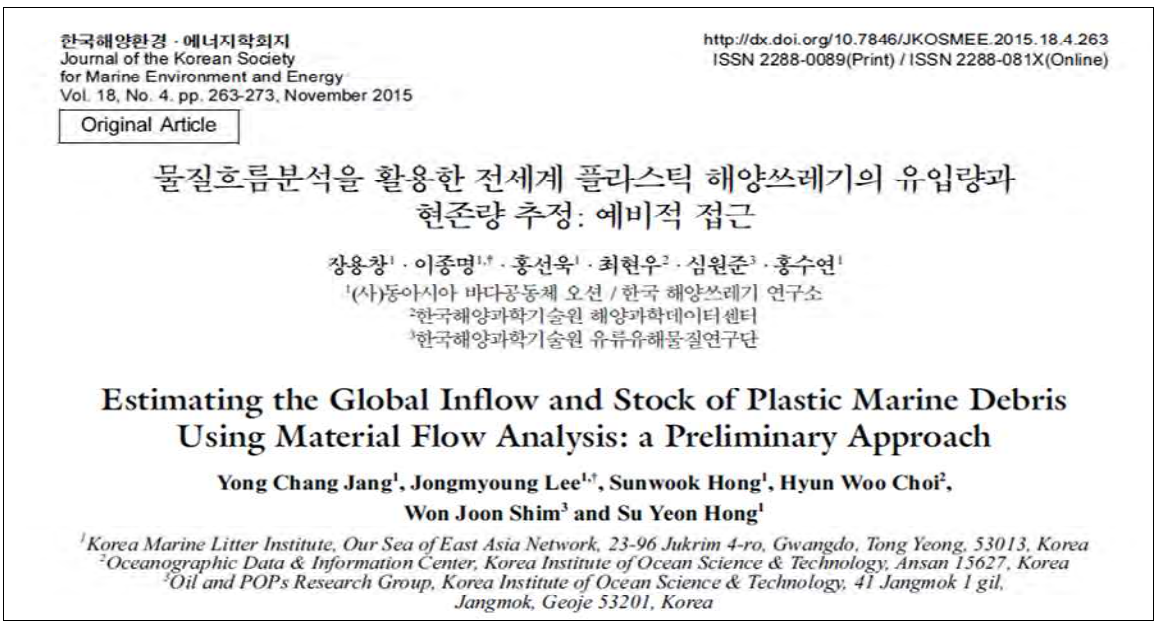

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물질흐름분석을 활용한 전세계 플라스틱 해양쓰레기의 유입량과 현존량 추정: 예비적 접근

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Estimating the Global Inflow and Stock of Plastic Marine Debris Using Material Flow Analysis: a Preliminary Approach

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Researchers of OSEAN and KIOST (Korea Institute of Ocean Science & Technology) published the paper to estimate the annual input to and the standing stock of plastic marine debris in global ocean. Although the growing concerns on plastic marine debris have been one of the major global environmental issues, there have been serious lack of methods and data to understand and estimate the quantities.

In this research, the authors calculated the potential leakage out of plastic products into Korean seas and applied to the global scale. The corresponding author, Dr. Jongmyoung Lee says "To date there has been still difficulty estimating plastic debris input quantities although a very recent research quantitatively showed mismanaged plastic waste enter the ocean. By comparison, this research hired a very simple and transparent process and separately estimated annual input from standing stock."

The research estimated that about 4.2 million tons of plastic debris entered the ocean in 2013 and there is a stock of 86 million tons of plastic debris as of the end of 2013. Although there are lots of missing parts to support the numbers, it shows irreversible plastic debris pollution and emphasizes stronger preventive measures.

RESEARCHES

14. Initiation of Research Project on Environmental Risk Assessment of Microplastics in Korean Waters

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Recommended Citation:

Won Joon Shim, Sang Hee Hong. (2015). Initiation of Research Project on Environmental Risk Assessment of Microplastics in Korean Waters. Marine Litter News, Vol. 6(2): 40-41.

Marine pollution by plastic litter has been a major global environmental issue in recent decades. Global concern over the problems presented by plastic waste has grown rapidly since the presence of microscopic sized plastic particles in both coast and remote seas, as well as in organisms ranging from planktons to top predators were revealed. The decreasing size of plastic litter in the environment presents increasing challenges not only for organisms that struggle against it, but also scientists who assess its ecological and the human health risk. Although a series of studies examined the distribution, fate, ingestion, and effects of micro-plastics in order to fill knowledge gaps, and the number of scientific publications has increased exponentially over the past decade (GESAMP, 2015), more questions than answers remain. Among the many important topics, a key concern is determining the seriousness of the current levels of microplastic pollution in the coastal and open ocean, which can be determine by assessing the risks to ecological and human health caused by microplastics (Shim and Thompson, 2015).

Three year (2012-2014) in-house project at Korea Institute of Ocean Science and Technology that microplastic abundances in surface waters and sand beaches along the coast of Korea placed

Large microplastic particles of 1-5 mm in size range on a beach in Korea

in the upper margin of the levels reported worldwide (Song et al., 2014; Lee et al., 2015; Kang et al., 2015). In addition, fast fragmentation to micro-sized particles and leaching of a flame retardant, hexabromocyclodecane, from expanded polystyrene debris, which was top ranked plastic debris item in Korea beaches, were revealed (Shim et al., 2014; Al-Oldaini et al., 2015). Further research was required for the South Korean government to get better understanding of nationwide microplastic pollution status and its environmental consequences in coastal waters of Korea. Therefore, a new research project entitled, "Environmental Risk Assessment of Microplastics in Korean Coastal Waters" was initiated in May, 2015. Ministry of Oceans and Fisheries of Korea plans to input over five million dollars of research grant over the next six years. Korea Institute of Ocean Science and Technology leads the project in collaboration with experts in other research institutes and universities. The project consists of two major research categories of exposure analysis and effect analysis of microplastics. Subcategories include evaluation of microplastic pollution in multimedia such as water, sediment and organisms, estimation of environmental load, input pathway and transportation route, weathering and fragmentation process and biological effects including associated chemicals. Not only the scientific findings and monitoring data in the project, but also novel scientific results and data (i.e. fate and toxic effects of microplastics) from the various on-going scientific researches in the world will be integrated into characterizing the environmental risks of microplastics. Although the main goal of the project is the assessment of environmental risk of microplastics in Korean waters using localized exposure data, the result can also help further the understanding of the environmental risk posed by microplastics on a global scale.

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Shim WJ, Thompson RC (2015) Microplastic in the ocean. *Archives of Environmental Contamination and Toxicology* 69: 265–268.

Song YK, Hong SH, Jang M, Kang J-H, Kwon OY, Han GM, Shim WJ (2014) Large accumulation of micro-sized synthetic polymer particles in the sea surface microlayer. *Environmental Science and Technology* 48: 9014-9021.

Guidelines for Authors

Dear authors of ′Marine Litter News from East Asia Civil Forum on Marine Litter,′

Thank you for preparing your valuable manuscript for our journal. We welcome articles regarding researches, education, policies, and any other activities on marine litter issues from the globe. To make your article more easily understandable to readers around the world, please pay attention to the following guidelines.

1. Composition of Articles

(1) Title

-Please make it concise and understandable.

-Including the name of the relevant country is recommended.

(2) Name of the author

-The author should be natural persons even when writing articles representing organizations.

-Name of organization, author′s position, and email address should be included

(3) Figure, Map, or Table

-Figures, maps, or tables are recommended to be included in articles.

-Especially maps showing the geographical context of the article is strongly recommended.

-Each figure, map, and table should have captions explaining the figures, maps, and tables.

(4) References

-Referencing other texts for explaining the situation is recommended.

-All the lists of documents referenced needs to be included.

2. Submission, Acceptance, and Edition

-Anybody from around the world can submit the articles via email (loveseakorea@empas.com).

-As the journal is published at the end of May and November, draft articles need to be submitted by the end of April and October.

-All the articles which have basic quality will be accepted.

-The editor may ask some revision of the draft to make the article more easily understandable to readers.

3. Publication fee

-There is no publication fee to be paid by authors to us or by us to authors.

Thank you for your cooperation,

Sunwook Hong, the editor.

What is East Asia Civil Forum on Marine Litter?

East Asia Civil Forum on Marine Litter is a network established in 2009, made of NGO groups dedicated to protection of marine environment from marine litter in east Asia countries: Japan, South Korea, mainland China and Taiwan, Bangladeshi, Philippines as of 2015.

To the readers,

East Asian countries are connected to each other environmentally, geographically, historically, or culturally through shared regional seas. The East Asian region is one of the most dynamic economic centers with some of the busiest shipping lanes in the world. With the spread of mass production and consumption over the last decades came the huge increase in solid waste generation. There are, however, not enough waste treatment facilities and management measures, which makes the region vulnerable to marine debris pollution.

Entering the seas in large amounts, floating debris has become a source of concerns and conflicts among some neighboring countries. This transboundary environmental problem requires concerted efforts of all the relevant stakeholders beyond sectoral and political boundaries. In this regard, OSEAN (Our Sea of East Asia Network) and JEAN (Japan Environmental Action Network), the marine debris NGOs in Korea and Japan, have shared a vision in which people in the East Asia could act together as one community in protecting our precious marine ecosystems. We believe that NGOs in the East Asian countries have an important role in sharing experiences and acting together to address the marine debris issue in the region from the bottom up.

The city governments of Shimonoseki and Nagato, and JEAN co-organized '2009 Marine Litter Summit - Shimonoseki•Nagato Meeting' on October 16-18, 2009, in Shimonoseki, Japan. OSEAN suggested in the meeting to start an 'East Asian Civil Forum on Marine Litter' through which relevant NGOs and organizations in the East Asia could share experiences and information and work together on the marine debris problems. OSEAN and JEAN have reached a consensus to launch the forum and publish biannual newsletters. So we have launched the East Asian Civil Forum on Marine Litter and we are delivering marine debris news from member countries via e-mail to people who are concerned with this problem on local, national, and regional levels. In late 2012 now, we have four members above. We hope that the forum could provide a venue for all of us to share our vision, experiences, and creative actions.

This is the first effort to link the East Asian people beyond geographical and language barriers to a common goal of protecting our seas from marine debris pollution. NGOs and organizations that have interests and passion to make our seas clean and healthy are more than welcome to join us. For more information, you can contact us at loveseakorea@empas.com. Please let us know if you have any problem in receiving the newsletter. These articles are also available online at http://cafe.naver.com/osean.

Secretariat,
Sunwook Hong (OSEAN) and Kojima Azusa (JEAN)

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