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Marine Litter News

From East Asia Civil Forum on Marine Litter

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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, Thailand and Taiwan. We welcome more participation from other NGOs from east asian countries.

Preface

Dear Readers from around the world concerned with marine litter,

I am honored to communicate with you with this newsletter on how to reduce marine litter and its impacts. This Marine Litter News from East Asia Civil Forum is published biannually.

This volume tells you many stories about our activities. Clean Ocean Youth Movement in the Plastic Era and the Marine Litter Policy Exchange and Seminar was held in Taiwan. In Japan, the 12th Marine Litter Summit and the Northwest Pacific Regional Node of the Global Partnership on Marine Litter were held. The Tsunami driftage from Japan creates connections with Canada across the Pacific. In Korea, Asian marine litter environmentalists were trained, a side event for the impact of marine litter on wildlife at the meeting of Convention on Biological Diversity, and a Marine Litter Session was held at the annual meeting of the North Pacific Marine Science Organization (PICES). Also included are a news on new findings on marine litter published in scientific journals, and a book review by a young reader on 'Plastic Ocean (Moore, 2011)'.

We hope this newsletter can be informative for you, and wish that someday you can give us good news, too.

With love,

November, 2014,

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

ACTIVITIES

1. Asian environmentalists trained in Korea

By Yong Chang Jang, Korea Marine Litter Institute, researcher of OSEAN,
yongchngjang@hotmail.com

Recommended Citation:

Jang, Yong Chang. (2014). Asian environmentalists trained in Korea. *Marine Litter News from East Asia Civil Forum on Marine Litter*, Vol. 5(2): 4-5.



The participants of the marine debris training program

Ten environmentalists fighting against the marine debris problem were trained in South Korea in June, 2014, at the AMETEC training program.

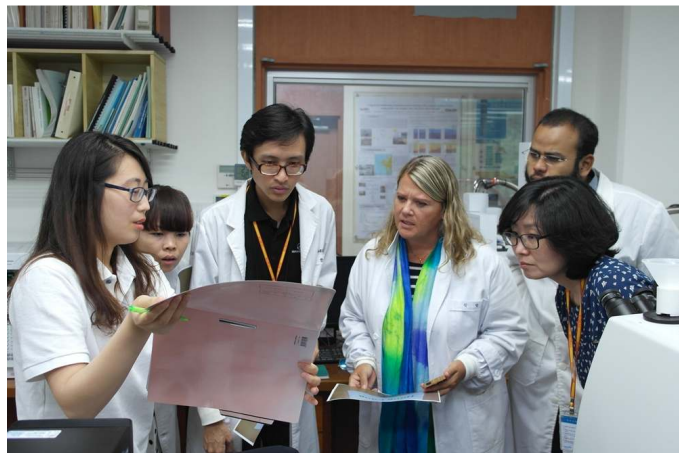
AMETEC is the Asia Pacific Economic Cooperation (APEC) Marine Environmental Training and Education Center. AMETEC is now managed by KIOST (Korea Institute of Ocean Science and Technology). From 2013 for three years, AMETEC is training Asia Pacific environmentalists on the issue of marine debris. In 2014, 10 trainees came from Bangladesh, Brunei, China, Singapore, Taiwan, Thailand, Vietnam, Sri Lanka, and Peru. Most of them are International Coastal Cleanup coordinators in the region.

Perhaps the biggest outcome of this AMETEC marine debris program is the development of AMETEC Protocol on beach debris survey. From 2013, the participants discussed on how to survey the beach debris using the same method, so that comparisons between countries might be possible. After developing the protocol, we surveyed beaches in each country with the protocol in 2013 and 2014. The protocol can be downloaded from the website of OSEAN (www.osean.net).

This year, the participants brought their samples of small sized plastic debris from home countries using sieves provided by KIOST in advance. They counted those and classified types by naked eyes and then tested by FTIR (Fourier transform infrared spectroscopy).



Classifying, counting, and weighing micro-plastic samples



Finding plastic types of samples with an FTIR spectrometer

The more important outcome was the gathering of the participants itself. In Asia, there has been no opportunity to share the knowledge and experience of marine debris together. The participants were all excited to have this opportunity to learn from each other. After the first year training, the participants are still communicating with each other via email and a Facebook group page (<https://www.facebook.com/groups/ametecmarinedebris/>).

I hope such cooperation can continue throughout the Asia-Pacific region.



Country report from each participant



Group presentation on microplastic analysis

ACTIVITIES

2. Clean Ocean Youth Movement in the Plastic Era: The ocean needs your action!

By Chun Chi Wu, Marine debris specialist for The Society of Wilderness
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Recommended Citation:

Wu, Chun Chi. (2014). Clean Ocean Youth Movement in the Plastic Era: The ocean needs your action! Marine Litter News from East Asia Civil Forum on Marine Litter, Vol. 5(2): 6-7.



The Clean Ocean Youth Movement 2014, Taiwan

The Clean Ocean Youth Movement addressed the marine plastic pollution issue, scheduled from 23-25 August 2014 in Taiwan. This conference was a joint effort of the Society of Wilderness (SOW), the National Museum of Marine Biology and Aquarium, and the Society of Entrepreneurs and Ecology (SEE). The SOW was calling participants (16-25 years old students) from Taiwan and China to come up with creative proposals to implement "reducing-plastic" actions in their school and their daily life.

Not only the students but the SOW also invited speakers including local and international experts on issues of marine plastic pollution, NGO representatives, and professionals from marketing industry to share their stories at this conference. La Benida Hui, artists from New York, shared their sailing expedition with 5Gyres from Bermuda to Iceland, which did research into the micro-plastic pollution in the world's oceans. This expedition affected her a lot; besides studying the plastics, the crews also learned many new things about the boat, sailing, and seamanship etc. She encouraged the students with a quote: "In the end we will conserve only what we love, we will only love what we know."

On average a person from Taiwan uses 2 plastics bags per day, and the country has an annual usage of 15 billion plastic beverage cups and 45 billion PET bottles. Teddy Chang, the contact person of International Coastal Cleanup in Taiwan, traveled around the coastline of Taiwan to witness the severity of the marine debris problem. He thought people needed to change their behavior by minimizing the usage of such plastic products, influencing policy-making, and cooperating with industries. "However, the plastic will not disappear even if it is too small to be seen by the naked-eyes," Jason Hu from the SOW shared his experience in the 2014 AMETEC Training Workshop, "plastics are degraded very slowly by the sun. Such degradation creates plastic rubbish of a wide range of sizes, classified into macroplastic, microplastic, and nanoplastic which seem invisible." He assumed that we are now in the Plastic Era because the plastics we used in daily life may become the fossils of the future. "We must review our "plastic foot-print" and take action to reduce our impact on the planet."



The Clean Ocean Youth Movement 2014, Taiwan

But how do we choose our products? Chemical names such as PE, PET, PP, PMMA, nylon etc. can be confusing, and make it difficult to make a right choice even we customers have the intention to. Tracey Read, the CEO and founder of the NGO, Plastic Free Seas in Hong Kong, said, "As consumers, we can use social media to express our needs and desires. There are movements which provide databases of plastic free products, which strengthens consumer power to engage companies and corporate in acting more responsibly to the environment."

The author of "Plastic-Free: How I Kicked the Plastic Habit and How You Can Too", Beth Terry suggested the best way to tackle the issue of plastic waste is to start avoid using them step-by-step. For example, we can bring our own bag for shopping and our own containers for water and food, buy produce without packaging, shop from bulk bins, and use plastic-free personal care etc. "As long as we want to, we can always reduce the use of plastic utensils."

Martin Thiel, marine ecologist and environmental educator from Chile, started working with school kids in 2007 to cultivate the little scientists. They found that most rubbish found on Chilean beaches came from Chile itself. This survey indirectly drove the lawmaker to make a policy to fine littering. Data with scientific background is therefore important when confronting politicians with environmental issues. "To tackle the marine rubbish problem, we need to get citizens involved, make a daily habit of keeping the environment clean, and have fun while doing so," Martin said.

After the course, the students were divided into several groups and made their concrete implementation plan which aimed to raise the public awareness to reduce the plastics. They went to the Kenting Street to persuade shopkeepers not to automatically offer plastic bags to their customers. With a hand-made poster, the students informed the shopkeeper of the harmful effects of plastic bags on the environment and humans. It was apparently easier to work with smaller local shops than chain stores as the later usually have Standard Operation Protocol for staff to follow. In just a few hours, the students successfully put up their slogans in over 20 shops, which stated, "We do not automatically provide plastic bag!" Later that day, the shopkeeper said the slogans make it easier to convey the message and they were actually very proud of it. Plastic bags also represented a cost to them; therefore it was also economically appealing to them to give out less of them to the customers. The students realized that it is all about breaking the "old" habit; the convenient life with plastics. Start now and it is not as difficult as they think.



The Clean Ocean Youth Movement 2014, Taiwan



The Clean Ocean Youth Movement 2014, Taiwan

ACTIVITIES

3. The 12th Marine Litter Summit at Yamagata Prefecture (23-27 July 2014)

By Sophia Choi, Master's Candidate at Sophia University Graduate School of Global Environmental Studies, Japan

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Recommended Citation:

Choi, Sophia. (2014) The 12th Marine Litter Summit at Yamagata Prefecture (23-27 July 2014). *Marine Litter News from East Asia Civil Forum on Marine Litter*, Vol. 5(2): 8-9.



The 12th Marine Litter Summit held in Yamagata Prefecture, Japan (23-27 July)

YAMAGATA PREFECTURE, JAPAN -

The 12th Marine Litter Summit (hereafter the Summit) was held in Yamagata Prefecture from 23 to 27 July 2014. Diverse stakeholders and participants including local and national governments, non-governmental organizations, scientific experts, private industry, and local community groups have gathered for a dialogue and exchange of information on marine debris (or litter) management at local, prefectural, and national level. Special guests from non-governmental organizations in Korea and Taiwan have also joined to share their experiences.

The Summit serves as a platform where different stakeholders gather and exchange information, opinions, and form networks to manage marine debris effectively. As it is very difficult for governments at local and national level and different organizations and researchers from different areas to be up-to-date on each organizations' activities or new changes and improvements from previous activities, the Summit provides opportunities for both the former and new participants to be informed about each other's works through presentations and discussions.

"What we need is institutionalization", said Mr. Kaneko Hiroshi, from Japan Environmental Action Network (JEAN) Partnership Office (on the first day of meeting, 25 July 2014)

With 12 years of history, the Summit has been hosted in different prefectures around Japan. Marine debris, in its nature, involves diverse stakeholders of society and thus requires active involvement and awareness of relevant stakeholders. In the context of the Summit and marine debris management, stakeholders in Japan as well as its international partners have achieved a significant level of success. However, for a continued and even greater success, current management practices need to be systemized and institutionalized so that areas that do not have specific activities or projects for managing marine debris can easily adopt new projects while areas that already have adopted such projects can be further strengthened and regularly monitored.

"To prevent marine litter is the latest stage; to prevent potential waste materials is the early stage", said Dr. Shigeru Fujieda from Kagoshima University (on the second day of meeting, 26 July 2014)

During the two days of discussion, a number of speakers, including Dr. Fujieda, highlighted the importance of prevention of potential debris material in the early stage. Currently, overall focus on marine debris management has a tendency to incline towards cleanup activities of immediately visible threats - the trash before our eyes. Although cleaning up of the existing trash is critically important to reduce the impacts of marine debris on our nature, more attention is required in prevention of such wastes being generated in the first place. Moreover, organizations including Arakawa Clean Forum and Japan Environmental Action Network agreed that increasing public's perception towards "Yes-in-my-backyard" (as opposite to "Not-in-my-backyard" syndrome) on marine debris issue is crucial in establishing collective action and responsibility to address the problem.

During short breaks of the meetings, participants were exposed to creative art exhibition of an artist who made craft dolls by using debris materials and also to marine debris educational films by participating filmmaker and organizations. The crafts were made particularly for children to be exposed to marine debris problem in a friendly and enjoyable way.

Furthermore, an interesting and vital note was made by a local organization that aging-society in Japan has an effect on marine debris management, especially in areas where majority of the population is old and cannot actively participate in the management activities. In such cases, organizations are required to seek programs that can incorporate a broad-spectrum of age groups in their community. Due to the complex nature of marine debris management, different social issues and innovative approaches need to be considered to involve various members of the community depending on the context and characteristics of each region.

In sum, marine debris, both as a national and transboundary problem requires cooperation of diverse sectors of the society as well as regional and international collaboration for effective management. In fact, it is difficult to identify which sector of the society is not involved. At both national and transboundary levels, the public's increased awareness and constant attention on marine debris as "Yes-in-my-backyard" problem is required for a long-term successful management. Moreover, strengthening current management practices through its institutionalization and systematization will be expected for the future management of marine debris.



Cleanup on a beach of Tobishima island, NW Japan

ACTIVITIES

4. A side event for the impact of marine debris on wildlife at Convention on Biological Diversity in Pyeongchang

By Yong Chang Jang, Korea Marine Litter Institute of OSEAN
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Recommended Citation:

Jang, Yong Chang. (2014). A side event for the impact of marine debris on wildlife at Convention on Biological Diversity in Pyeongchang. *Marine Litter News from East Asia Civil Forum on Marine Litter*, Vol. 5(2): 10-11.

A side Event for the impact of marine debris on wildlife was held at the Convention on Biological Diversity in Pyeongchang on the 10th of October, 2014. This was hosted by the secretariat of Convention on biological Diversity, Korean Maritime Institute, OSEAN, and Waterbird Network Korea. About 40 people were present at this side event and showed much interest in the impact of marine debris on wildlife.

Dr. Kisup Lee gave a speech about the impact of recreational fishing debris on the Black-faced Spoonbills. Dr. Sun Wook Hong gave a presentation on the citizen activities for the survey of adverse effects of marine debris. Mr. Nicholas Bax (CISRO/Australia), Ms. Jacqueline Alder (UNEP), Ms. Jessica Sanders (FAO), and Ms. Daniela Diz (WWF), who are working at international organizations and professionals in this field, discussed the matter.



Presenters (Dr. Kisup Lee and Dr. Sunwook Hong), other panelists (Mr. Nicholas Bax (CISRO/Australia), Ms. Jacqueline Alder (UNEP), Ms. Jessica Sanders (FAO), Ms. Daniela Diz (WWF)), and chairmen (Dr. Daeseok Kang) (from left to right),

OSEAN will continue to collect the cases of adverse effects of marine debris, and ask the Korean government and international organizations to establish policies to protect wildlife against marine debris, as well as clean up the breeding sites of black-faced spoonbills.

We, OSEAN, would like to ask you to pay attention to the issue.



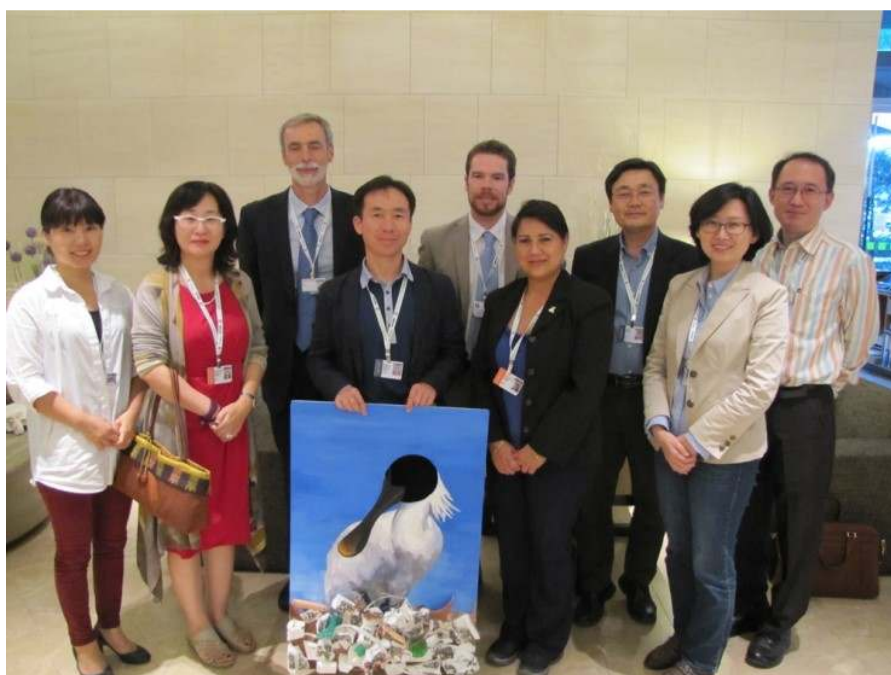
Side event was held in a big temporary tent. About 40 people were present.



Much attention was drawn by the artwork of Prof. Jung A Kim made with marine debris



Works by Jung A Kim drew much attention from many people



Pre-workshop discussion was had by co-hosts

ACTIVITIES

5. Marine Litter Policy Exchange and Seminar - Okinawa and Taiwan

By MsYú Syuán Wun , reporter of TEIA
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Recommended Citation:

Wun, Yú Syuán. (2014). Marine Litter Policy Exchange and Seminar - Okinawa and Taiwan. *Marine Litter News from East Asia Civil Forum on Marine Litter*, Vol 5(2): 12-14.

In 2009, Japan passed the Regulation of Marine Litter Management to investigate the situation and provides solutions, including litter transportation and environment education such as garbage reduction. Based on the regulation, Okinawa Prefecture government organized this activity and invited Taiwan, located in Kuroshio area, to participate. Taiwan NGOs and the New Taipei City government were invited to join the seminar from 18~21 October in Ishigaki Island. In addition to the government representatives, there were total 18 NGOs from both Taiwan and Japan to attend, including Kuroshio Ocean Education Foundation, Tainan Community University, the Society of Wilderness, National Museum of Marine Science & Technology, and Taiwan Environmental Info Center.

During the opening ceremony of 18th, Japan and Taiwan officials exchanged policies on marine litter issues. Hidefumi Toma, Director General of Department of Environmental Affairs of Okinawa Prefecture mentioned that marine litter came from both local and foreign countries. It brought negative impacts on environment and tourism. Okinawa and Taiwan have similar geographic conditions and short travel distance. This exchange experience could help to provide better policies. Chiu Ming-chung, Secretary General of the New Taipei City Environment Bureau mentioned the issues of the pollution remediation of Tamsui River and constructed wetlands. Chen Yen-ling, head of Environmental Sanitation Management Section from New Taipei City introduced the achievements of coastline voluntary managements, local beach cleanups, and environment education.

On the 19th, Taiwan and Okinawa participants attended the cleanup along the Yoshihara coastline, located in the northern Ishigaki. The activity was organized by the local institution named Love Love Network. It was a small, voluntary cleanup before.



Joint cleanup of Taiwan-Okinawa at the beach of Ishigaki Island, Okinawa Prefecture (Southwesternmost location of Japan)

However, from 2009, it became a big annual cleanup, providing a relaxing and delightful education activity. 2014 is the sixth annual activity and the participants increased from 200 people to 650 this year. The host organization invited people to clean the beach, sort out the collected items, and make art work with the litter. Accompanied by a music concert, local volunteers also prepared lunch for participants, and many of them brought their own tableware to enjoy the food. Rika Kasahara, director of the host organization, said that they hoped this activity could also make the first-time participants feel enjoyable. She also emphasized that the staffs were all volunteers. So the motivation wouldn't be influenced by money or authority.



Tai Ya-ting, volunteer coordinator from Tainan Community University, commented that sorting out the litter without having complicated counting process gave people more time to clean the beach. Volunteers had more senses of achievements because the beach litter was greatly reduced. Interesting activity design made the cleanup really enjoyable. **(Photos: Activities to make cleanup enjoyable)**

On the 20th, during the seminar, Japan expressed great interest on Taiwan's policy "reducing from the sources," such as discount for bringing one's own drink containers, PET and glass bottles recycling systems, paid shopping bags, etc. Those policies increase people's awareness to reduce uses of disposable items. Jason Hu, representative of the Society of Wilderness said the numbers of PET bottles collected on Taiwan's beaches were much fewer than those in Japan. It could be the money incentive to make this difference. New Taipei City government cooperated with shops and markets to offer multi-purposed bags to realize the goal of reduce, reuse and recycle.

Japan's Regulation of Marine Litter Management provides guidelines and budget for related research and management. With the policy and pleasant cleanup activities, the government and local environment organizations can both contribute to tackle the litter issues.

Leon Yun-chih, from National Museum of Marine Science & Technology, mentioned a certain amount of litter is from fishery boats in addition to household garbage, littering tourists, drifting from other countries. Besides ICC monitoring system, marine litter education should expand to business sectors and other organizations for a cleaner ocean.

Chou Chao-jui and Jason Hu, from Taiwan Environmental Info Association and the Society of Wilderness pointed out questions such as whether a cleanup activity would arouse volunteers' care for the ocean. The analysis and design of monitoring system should be rethought. More importantly, Taiwan could endeavor to educate, research, develop policies for marine litter. Multiple methods should be carried out to solve the problems.

Lai Wei-jen, from Kuroshio Ocean Education mentioned that this exchange gave Taiwan NGOs great opportunity to understand Japan for future cooperation.

Representatives from Okinawa will visit Taiwan in January 2015 to participate local cleanup and policy discussion seminar. Taiwan and Okinawa work cooperatively to exchange information, bring solutions to marine litter, educate the locals or even research and seek solutions together, for a better, cleaner Kuroshio.

ACTIVITIES



Seminar to exchange the knowledge and experiences on marine litter management

6. Northwest Pacific Regional Node of the GPML

By Takafumi Yoshida, Northwest Pacific Action Plan,
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Recommended Citation:

Yoshida, Takafumi. (2014). Northwest Pacific Regional Node of the GPML. Marine Litter News from East Asia Civil Forum on Marine Litter, Vol 5(2): 15.

The Northwest Pacific Regional Node of the Global Partnership on Marine Litter (GPML) was established with the support of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) in 2014.

The GPA aims to prevent degradation of the marine environment from land-based activities by encouraging efforts of States to preserve and protect the marine environment. Marine litter is one priority issue in GPA and the GPML was launched in June 2012, at the Rio+20 Conference.

Objectives of GPML are as follows: a) to reduce the impacts of marine litter worldwide on economies, ecosystems, animal welfare and human health, b) to enhance international cooperation and coordination through the promotion and implementation of the Honolulu Strategy – a global framework for the prevention and management of marine debris, as well as the Honolulu Commitment – a multi-stakeholder pledge, c) to promote knowledge management, information sharing and monitoring progress on the implementation of the Honolulu Strategy, d) to promote resource efficiency and economic development through waste prevention and by recovering valuable material and/or energy from waste, e) to increase awareness on sources, fate and impacts of marine litter, f) to assess emerging issue related to the fate and potential influence of marine litter, including (micro) plastics uptake in the food web and associated transfer of pollutants and impacts on the conservation and welfare of marine fauna.

To achieve the above objectives, GPML expects to strengthen and coordinate global and regional networks/nodes to tackle marine litter problems.

In the Northwest Pacific region, many non-governmental organizations (NGOs), such as JEAN and OSEAN, have implemented activities to resolve marine litter problems. Northwest Pacific Action Plan (NOWPAP) is the international cooperation



http://www.npec.or.jp/NWPacific_node

framework among China, Japan, Korea and Russia, and its member states initiated various actions on marine litter together with leading NGOs in a collaborative manner. In order to develop a network for efficiently sharing information among stakeholders and promoting actions to prevent marine litter input, the GPML Northwest Pacific Regional Node (http://www.npec.or.jp/NWPacific_node/) was established in 2014, co-hosted by NOWPAP Regional Coordinating Unit (RCU) and Northwest Pacific Environmental Cooperation Center (NPEC).

This regional node aims to enhance awareness of marine litter prevention actions at national, local and grass-root levels and to strengthen information exchange on best practices and measures for prevention of marine litter input among the NOWPAP member states and stakeholders.

What is marine litter? What kinds of marine litter are found on beaches? What are the sources of marine litter? What impact does marine litter have? These are the most basic questions that have to be answered for the general public to better understand marine litter problems. With illustrations and pictures, this regional node website provides a lot of information on marine litter problems in a visitor-friendly manner.

ACTIVITIES

7. The Human Gyre – Tsunami Driftage Creates Connections Across the Pacific

By Kate Le Souef, Tsunami debris cleanup coordinator for the Great Canadian Shoreline Cleanup
Vancouver Aquarium Marine Science Centre
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Recommended Citation:

Kate Le Souef. (2014). The Human Gyre - Tsunami Driftage Creates Connections Across the Pacific. *Marine Litter News from East Asia Civil Forum on Marine Litter*, Vol 5(2): 16-17.

“Marine debris usually travels with currents from Japan to North America. However, through our networks and partnerships we are now able to bring both people and debris in the other direction.” This was the main message Dr. Shigeru Fujieda, from Kagoshima University, delivered in his closing remarks at a public symposium on tsunami debris in Japan.

It was my first time in Japan and I was there as a guest of the Japanese Environmental Action Network witnessing the effects of tsunami debris.

The tragedy of the 2011 tsunami had brought representatives from around-the-world together to see and hear about the effects of the tsunami firsthand. Nearly four years after the tsunami, many residents continue to feel the effects as they rebuild homes and grieve for lost loved ones.

We travelled along the Sea of Japan (East Sea) and the Pacific coast attending workshops, public symposiums and visiting some of the hardest hit shorelines. Quickly, we became a close-knit group sharing our stories on how we are each working to clean up tsunami and marine debris from our respective shorelines.



The ocean connects us all, even from halfway around the world



The fishing buoy in the tree shows the height of the wave from the 2011 tsunami

Perhaps you've heard about the Japanese motorbike and boats that washed ashore in North America? North Pacific gyres carried debris from Japan across the ocean to the shores of British Columbia and the United States. Despite the media attention to these events, items related to the tsunami are a fraction of the marine debris that enters the ocean every day. Litter from land based activities, fishing and shipping dominates the material we find on Pacific beaches.

(Kate Le Souef, tsunami debris cleanup coordinator for the Great Canadian Shoreline Cleanup, travelled to Japan to learn more about the impact of tsunami debris. This trip was generously provided by the Japanese Environmental Action Network. The Great Canadian Shoreline Cleanup, presented by Loblaw Companies Limited, is a joint conservation initiative of the Vancouver Aquarium and World Wide Fund for Nature (WWF). Learn more at www.shorelinecleanup.ca.)



Working together to reduce marine debris from preventable sources

Japanese driftage items are the result of a tragic natural disaster and this source of marine debris is not preventable. However, regular marine debris from land based activities, fishing and shipping is completely preventable when appropriate measures are taken. Meeting the survivors of the tsunami confirmed our collective agreement to work together across the ocean to reduce marine debris. One outcome of the 2011 tsunami will be cleaner shorelines and increased awareness of marine debris.

We encourage you to play a role and join the fight for your shoreline. Sign up for our Great Canadian Shoreline Cleanup — registration opens February 2015.

RESEARCHES

8. Marine Litter Session was held at the annual meeting of the North Pacific Marine Science Organization (PICES)

By Yong Chang Jang, Korea Marine Debris Institute of OSEAN
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Recommended Citation:

Jang, Yong Chang. (2014). Marine Litter Session was held at the annual meeting of the North Pacific Marine Science Organization (PICES). Marine Litter News from East Asia Civil Forum on Marine Litter, Vol. 5(2): 18-19.

Marine Litter Session was held at the annual meeting of the North Pacific Marine Science Organization (PICES) 2014, in Yeosu EXPO Marine Park, Korea on the 23rd of October, 2014. Dr. Sunwook Hong gave a presentation about NGO activities based on international cooperation to solve marine debris problem in Asia as an invited speaker. In addition, Dr. Yong chang Jang and Dr. Suyeon Hong participated in the poster sessions.

The North Pacific Marine Science Organization, also known as PICES, was established in 1992. As of 2014, there are five members: the U.S.A, Canada, Japan, Russia and Korea. Marine debris was dealt with as an important issue at the event. PICES has an annual workshop for sharing scientific research results, and this year it was held in Yeosu, Korea. Additional information about the organization and this year's workshop can be obtained from the following website, <https://www.pices.int/meetings/annual/PICES-2014/2014-background.aspx>.



Litter Session at North Pacific Marine Science Organization (PICES), 2014

Marine debris was the 8th topic of the 2014 PICES workshop, and the abstract of the session is as follows.

-Marine debris in the Ocean: Sources, transport, fate and effects of macro- and micro-plastics

Co-Conveners: Won Joon Shim (Korea), Peter S. Ross (Canada), Olga Lukyanova (Russia), Sangjin Lee (NOWPAP), Peter Kershaw (GESAMP), Jesus Manuel Gago Piñeiro (Spain / ICES)

Invited Speakers: Marcus Eriksen (5 Gyres Institute, USA), Francois Galgani (Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER), France), Sunwook Hong (Our Sea of East Asia Network (OSEAN), Korea), Hideshige Takada (Tokyo University of Agriculture and Technology, Japan), Co-sponsored by the Group of Experts on Scientific Aspects of Marine Pollution (GESAMP), International Council for the Exploration of the Sea (ICES) and the Northwest Pacific Action Plan (NOWPAP)

Following are the areas presented and discussed in the session.

1. Patterns of microplastic distribution in the global ocean and inland environments

Marcus Eriksen, 5 Gyres Institute, CA, USA.

E-mail: marcus@5gyres.org

5Gyres is a private institute in the U.S.A. The institute conducted a research for surveying the distribution of microplastics in gyres around the world. Gyres in the ocean are where the current is weak and the floating debris accumulate while they are floating away in the ocean. The researches results which compared the density of the microplastics in the ocean around the world are very interesting. They estimate that the microplastics floating around the gyres are barely 5 thousand billion in number and 269 thousand tons in weight.

This is a very small amount when we consider that world plastic production was 280million tons in 2010. Therefore, Marcus Eriksen said that the surface layer in the gyres is not the final destination for the marine debris. Actually, he suggested that the marine debris accumulate in the bottom of the ocean. Francois Galgani also showed a similar phenomenon through his video. The video showed that there were many plastic bottles found 1km below the surface at the bottom of the ocean.

2. Litter in the Mediterranean Sea within the European Marine Strategy Framework Directive (MSFD): Indicators for descriptor 10, GES and monitoring

Francois Galgani, Ifremer, Immeuble Agostini, ZI Furiani, Bastia, Corsica.

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European Committee legislate Marine Strategy Framework Directive in 2008. By this law, the European Committee should achieve a good environmental status. Dr. Galgani explained the qualitative descriptors of a Good Environmental Status in the field of marine debris and reported survey results of marine debris from the Mediterranean Sea.

I raised the question regarding the descriptors of the marine debris. At present there are 4 descriptors for marine debris, but all of them can only show stock of marine debris. They can't reflect inflow of marine debris. If we determine the success of the policy of the marine debris, we have to set the descriptors and conduct the surveys with considering the flow. Answering my question, he said that because the descriptors are the goal for estimating the good environmental status, we can use the term of stock to decide the status of environment. They also survey the river to know the inflow of the litter from it in order to calculate influx overall.

RESEARCHES

9. New findings on marine debris published in scientific journals by OSEAN

By Yong Chang Jang, Korea Marine Debris Institute of OSEAN
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Recommended Citation:

Jang, Yong Chang. (2014). New findings on marine debris published in scientific journals by OSEAN. *Marine Litter News from East Asia Civil Forum on Marine Litter*, Vol. 5(2): 20.

Our Sea of East Asia Network, Inc. (OSEAN) is making efforts to share its experiences on marine debris with many people concerned, including scientists all around the world. In 2014, several papers with new findings on marine debris were published on scientific journals. Some of the lists are here.

Hong, S., Lee, J., Kang, D., Choi, H. W., & Ko, S. H. (2014). Quantities, composition, and sources of beach debris in Korea from the results of nationwide monitoring. *Marine Pollution Bulletin*, 84(1), 27-34.

Hong, S. Y., Lee, C. W., Hong, S. Lee, J., and Jang, Y. C.. (2014). Evaluation of Beach Pollution by Aquaculture Styrofoam Buoys in Tongyeong, Korea. *Journal of the Korean Society for Marine Environment and Energy*, 17(2): 104-115. (In Korean with English abstract).

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BOOK REVIEW - Plastic Ocean

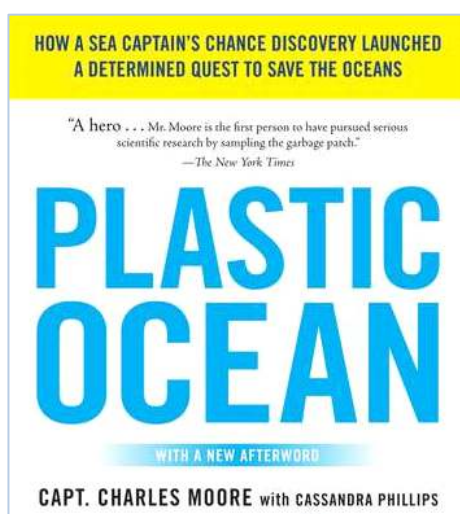
10. The Shocking Reality of Plastic Pollution in the Ocean

A great book by Captain Charles Moore, *Plastic Ocean* (2011) was reviewed by a young reader. The book was translated into Korean in 2013.

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Bits of plastic would be the last thing that anyone would expect or want to see inside their seafood. Yet in the near future, it may become normal

for people to be finding bits and pieces of plastic inside their fish, unless action is taken to stop plastic pollution that is threatening the Earth's oceans. In the book *Plastic Ocean* by Captain Charles Moore, Mr. Moore reveals the shocking truth of how vast quantities of plastic are now polluting the Earth's oceans, with devastating effects on both the ecosystem and food chains. Captain Moore's book describes the research voyages from onboard the marine research vessel *Algalita* to the Great Pacific Garbage Patch, one out of five major garbage patches floating out in the ocean, in which plastic waste of all sorts has accumulated to form what some are calling a "floating island" of plastic or a "mountain of trash".

In addition, plastic takes decades to break up into smaller pieces, and even for the ones that do disintegrate, it disintegrates into toxins.

Capt. Moore also discusses in his book millions of micro-plastic bits that could harm entire food chains. Plastic, while out in the ocean, breaks down into what is called micro-plastics. Due to its resemblance to zooplankton or animals and eggs, fish sometimes consume these tiny bits of plastic by mistaking it for food, and the toxins in plastic go up the food chain, eventually to be consumed by those at the top of the food pyramid, including us humans. The fact that around 13,000 to 15,000 pieces of plastic are dumped into the ocean around the globe everyday does not help alleviate the severe reality. In the end, the plastic that we carelessly dump into the oceans come back to harm us by causing health issues because of the plastic elements in our food.

There is no doubt that the accumulation of plastic waste in the ocean is a serious issue. There are over 100,000 marine creatures found dead every year from being entangled in plastic. Captain Moore and others have made invaluable contributions to ocean conservation efforts in regards to plastic pollution, and describes in *Plastic Ocean* the urgency of solving the issue. Beyond identifying the problem, Mr. Moore also offers various potential solutions to tackle the situation, such as chemical recycling, in which plastic polymer is changed back into its monomers. He also supports the use of marine-biodegradable plastic, which aquatic bacteria can break down easier.

Living in a world with a population nearing eight billion with dwindling natural resources, it is paramount for there to be increased awareness of the detrimental effects of human-driven environmental damage. I learned after reading *Plastic Ocean*, how important it would be for us to do everything in order to stop polluting our oceans. After all, as Captain Moore points out, "only we humans make waste that nature can't digest."

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.

Network member groups are:

Japan: Japan Environmental Action Network (JEAN)

South Korea: Our Sea of East Asia Network (OSEAN)

Thailand: Green Fins Association (GFA)

Taiwan: Taiwan Ocean Cleanup Alliance (TOCA)

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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