

Collect it, decorate with it

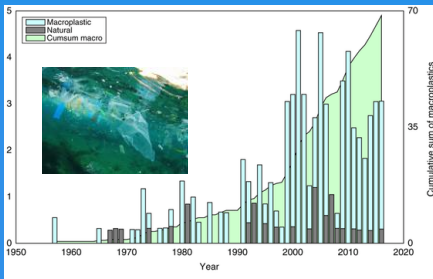


Abstract W201905-I Shizuoka Prefectural Mishima Kita SHS : Takuto Horie

Nowadays, ocean plastic pollution is one of the most serious problems affecting the environment. People make plastic products, and they throw them away into the ocean. Ocean creatures eat them by mistake and they die. It is no wonder that people are also at risk of consuming them without realizing. I designed a hand-made device to collect ocean plastics and attempted to introduce a possible way to make people aware of the existence of ocean plastics: art. I hope to inspire more people to learn about ocean plastics.

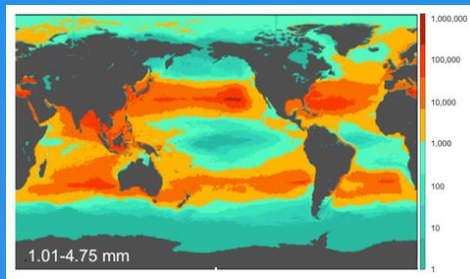
Present situation

The rise in ocean plastics evidenced from a 60-year time series



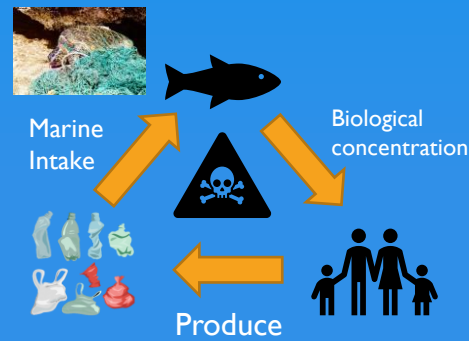
Left side : The rate of macro plastics and natural items in the northeast Atlantic and adjacent seas (%)
Right side : cumulative sum of macro plastics

Plastic Pollution in the World's Oceans (2007 ~ 2013)



Micro plastics

The cycle of ocean plastics



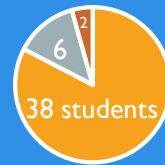
Fieldwork

The Earth Children Summit
Oceans 47 in Tokyo, Aug 8th, 2019



High school students and foreign children discussed this urgent issue of ocean plastics with experts.

Have you ever touched ocean plastics?



- I know, but I have never touched
- I know, and I have touched
- No, I don't know

According to the survey, about 83% of students have never touched ocean plastics though they know this problem.

Action 1 a device to collect ocean plastics



"Kibou No.1" uses the Venturi system at the bottom part. The venturi system makes it possible to produce micro bubbles. The bubbles lift up the ocean plastics to the storage chamber.

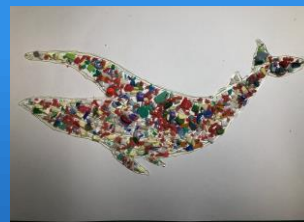
Result



Before making this device, it was very difficult to collect micro plastics (<math>< 5\text{ mm}</math>). But now, we can collect them in the seawater.

* At Numazu sea coast

Action 2 Making the collected ocean plastics into art motifs
"Let's experience ocean plastics"



In order to inform people who have never touched ocean plastics to experience them, I produced "Accessible ocean plastics art", using ocean plastics that I collected.

How can people help?



I want to try!



If you go to the sea, please pay attention to foreshores and prepare a bucket. Take sea sands and wash them, and you can easily collect micro plastics. You can produce your own art work.

* At Miho sea coast

Summary

Ocean plastic pollution is a severe problem. But it is difficult to raise awareness of this problem. If people find it engaging, they will be inspired to also collect ocean plastics to make their original artworks. Thus, the environment will be kept cleaner. Furthermore, improving my "Kibou" prototype and making it more accessible to others will also ameliorate the issue.

References

- "The rise in ocean plastics evidenced from a 60-year time series", Ostle, C. et al, <https://www.nature.com/articles/s41467-019-09506-1/figures/1> (accessed 2019/4/16)
- "Plastic pollution in the world's oceans: more than 5 trillion plastic pieces weighing over 250,000 tons afloat at sea", Eriksen M, et al, <https://doi.org/10.1371/journal.pone.0111913> (accessed 2019/12/10)
- The Earth Children Summit© <https://www.earthchildrensummit.org/> (accessed 2019/12/17)
- Cooperation : Tokai University's School of Marine Science and Technology, Izumi Sakamoto, an associate professor