

14 LIFE BELOW WATER



Protect the Richness of the Sea Through Beachcombing

Beachcombing is the act of collecting and observing items washed ashore. The name comes from how gathering these items resembles **combing** through hair.



Overview

@Cape Taibusa Nature Park

In spring 2021, we joined a **beachcombing** event at **Cape Taibusa** in Chiba and discovered large amounts of **trash** alongside **sea glass** and **shells**. Since then, we've participated in **beach and river cleanups** and shared our findings at external events to raise awareness about plastic pollution.



seashells



seaglass



@Katase Nishi-Hama (Kamakura)



@Arakawa-river



There were so many microplastics!

Knowing is the first step!

The causes of marine pollution include **oil spills** from shipping accidents, domestic **wastewater**, deteriorating water quality due to inflows of **industrial water**, and marine debris. We have focused our attention on marine debris.

Where Does Marine Debris Come From?

80% : cities
70% : plastic wastes



The damage caused by marine plastics to living creatures is serious. **More than 100,000 million mammals** die each year around the world, and **15%** of them are endangered.

Our oceans are about to be overflowed with garbage. It is estimated that more than **150 million tons of plastic waste** exist in the world, and **about 8 million tons (equivalent to 50,000 jumbo jets)** of such plastic waste are released into the ocean each year.



≡



8,000,000t/year

50,000 planes

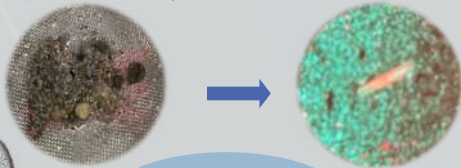
Amount of plastic trash in the ocean



15,000,000,000t

How much microplastic (MP) is contained in the sand on beaches?

Using **Nile Red**, we dyed and visualized the **microplastics (MP)** present in the sand!



When exposed to **green LED light**, only the microplastics glow **orange!**



* Horiba Pla-watch 現場製作所 MPs簡易学習キット ぶらウオッチ

Keyword: Microplastic (MP)

Among plastics, microplastics (MP) are a significant concern

Primary MP

These are plastics manufactured at a **microscopic size**, commonly found in toothpaste, detergents, and cosmetics. They enter the ocean via household wastewater, often bypassing sewage treatment →making recovery extremely difficult.

Secondary MP

These are created when larger plastic items, such as bottles, break down into micro-sized particles due to **natural forces** like **waves, rivers, and UV exposure** over time.

The Biggest Issue with Microplastics (MP):

Plastics accumulate in living organisms through the **food chain**, ultimately ending up in humans. It's estimated that humans consume the equivalent of **one credit card (5g)** per week and **one plastic hanger (21g)** per month.



What can we do?

Efforts like charging for plastic bags and banning plastic straws in cafes are underway, but the marine plastic issue remains far from resolved. What we can do as a high school student is to **prevent plastic from reaching the ocean**. According to WWF, plastics take a very long time to break down, and once microplastics enter the ocean, they are **almost impossible to recover**. To address this, cleanup activities like beach cleaning are an effective way to stop plastics from entering the sea. The ocean is deeply connected to our lives, and by continuing cleanup efforts and **raising awareness**, we hope to change attitudes toward waste by sharing this message.

As a first step, why not visit the coast and try beachcombing?



References

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At Fukagawa High School's Volunteer Club, we are part of the **Junior Red Cross** and actively engage in various activities, including raising awareness about **local and global** issues.

