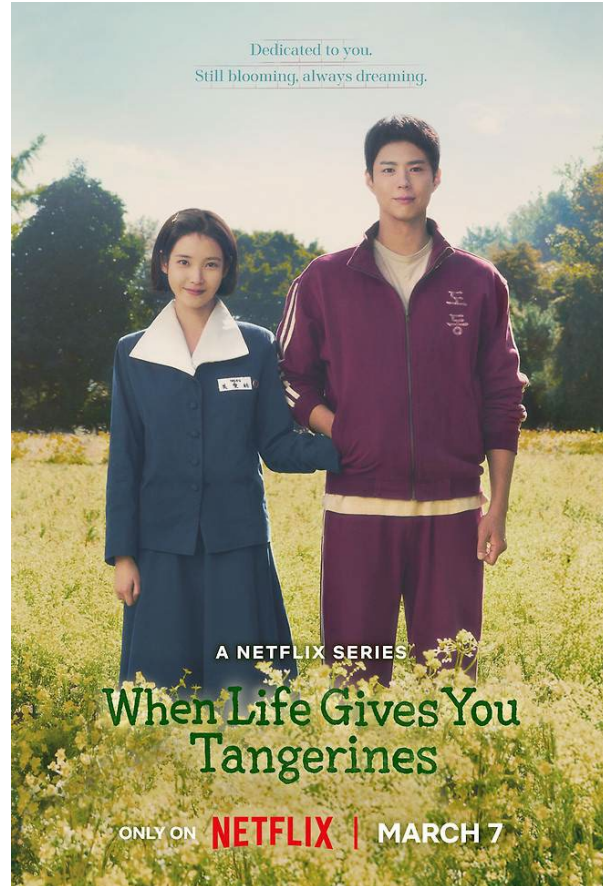


Artist's Experiments, Pyroplastics and Environmental Art

Kim Ji-hwan, CEO of USINGSEA





Have you all seen the Netflix drama
"When Life Gives You Tangerines"?



It's a drama that beautifully captures the warm stories of life and the stunning scenery of Jeju Island.



I, too, fell in love with this beautiful Jeju and moved here with my family in 2013, living here for 12 years now.



However, the romantic scenery I envisioned wasn't what I encountered from the start.



In my first year here, the number of tourists exceeded 10 million annually, surpassing even Hawaii, which is larger.



Jeju Island has now grown into the largest island in South Korea, home to about 700,000 people



So, did Jeju Island only have positive aspects due to the large number of tourists?



The original residents were pushed out due to gentrification, and communication with the new residents was cut off, creating barriers.



What about the tourist sites?



As they became crowded, traffic and trash problems repeated, and in the summer, when tourists flocked, sewage couldn't be treated and flowed directly into the sea.



My first year in Jeju was a bit different from the life I had dreamed of. Coincidentally, I also quit my eight-year journalism career, which led me to deep contemplation.



As I tried new changes to support my family, my life gradually began to change.



**I studied art in college, aspiring to become a Artist.
That forgotten dream was revived
when I quit my job as a journalist.**



My first new job was teaching after-school art classes at an elementary school. Initially, it was difficult to adjust to life with children, but I soon fell in love with their innocence.



**One day, during an art class, a little student asked me,
"Are you Artist, teacher?"**



**I replied, "I'm not a Artist," and at that moment,
I started to wonder again, "What was my dream?"**



**So, I decided to start creating again, even as a hobby.
And that's when I noticed the marine debris.**



**I remembered making artworks with discarded materials
when I couldn't afford paint in college.**



The beach was filled with colorful and diverse trash materials every day.



**As I made artworks one by one, life became enjoyable,
and I started dreaming of a romantic life,
enjoying leisure with my young children.**



At this time, I wasn't deeply concerned about the environment. Being an island, I knew Jeju had severe marine debris problems, but I hadn't given it much thought.



I simply set up a stall at the flea market on weekends, displayed my artworks, and was happy to receive attention from children.



Gradually, word spread, and I started receiving exhibition and broadcasting requests.



One day, a kindergarten director who saw my broadcast requested formal classes, marking the beginning of experiential environmental education using marine debris.



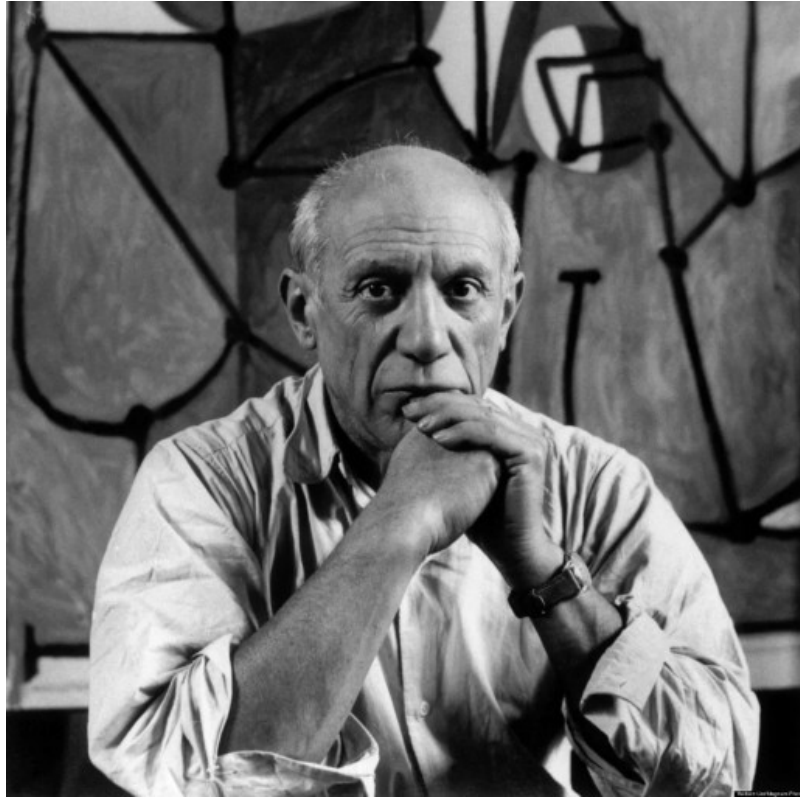
The children enjoyed it, and word spread, allowing me to teach about 50,000 people over 10 years.



For some, marine debris may evoke negative feelings like dirty or uselessness, but it was different for those who took my classes.



**I firmly believed that marine debris could gift us
with imagination.**



**Picasso said, "We are all born great artists."
But as we age, we gradually forget that fact.**



I thought that perhaps the debris washed up on the beach could be a source of imagination.



As I repeated many classes and exhibitions, I started receiving calls from various places. I received interview requests from newspapers and broadcasts, and environmental experts began to show interest.



Until then, I was only immersed in the happiness that marine debris brought.



However, in 2016, when I was invited to Japan for an exhibition and experiential education, I realized my shortcomings while talking with various experts.



The marine debris issue led to microplastics, and gradually expanded to climate change and carbon neutrality.



And one day, I started noticing small stone fragments that I hadn't seen before on a beach I frequented.



They looked like stones but were strangely light.
I didn't know their name or composition.



**And one day, I learned that those stones were plastic.
I found the same stones at a site where trash was
illegally burned on the coast.**



In Jeju, residents had been collecting and burning trash in one place after cleaning the beach for a long time.



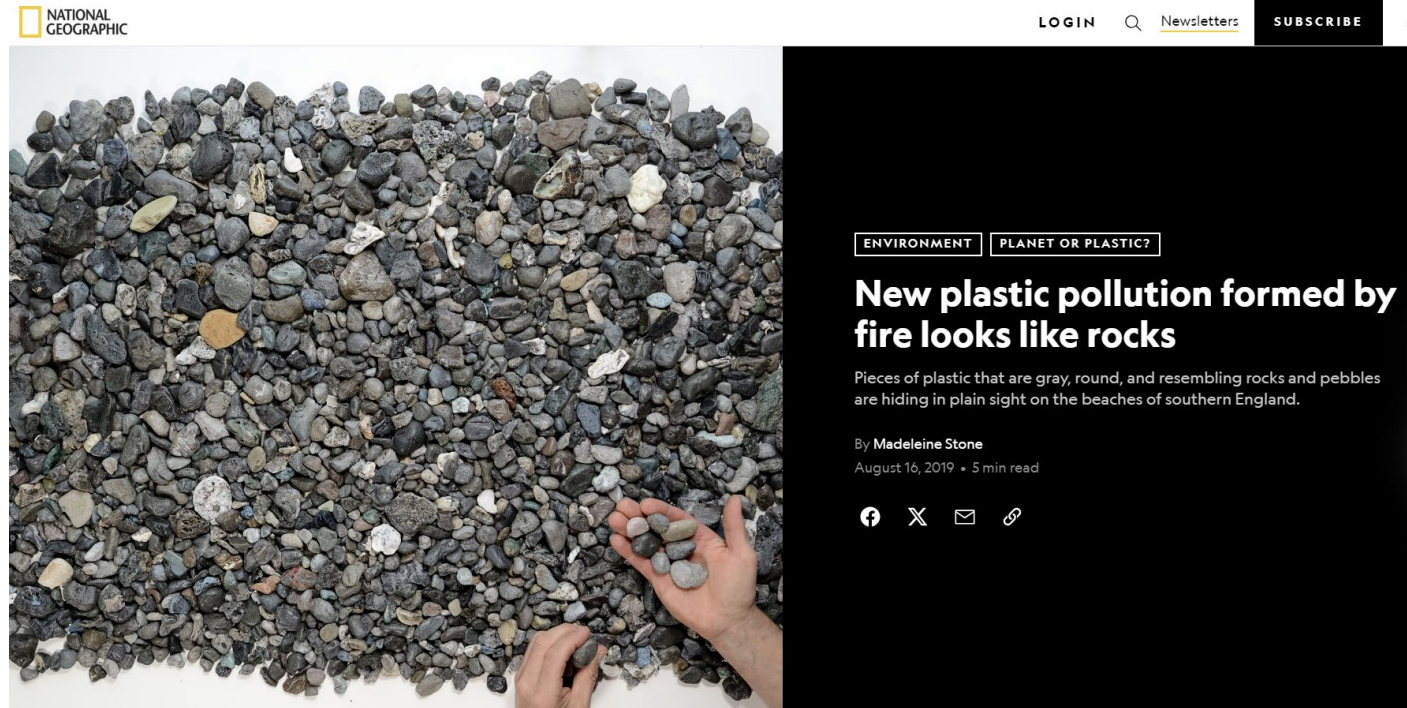
I think the purpose was to reduce the volume of trash with a simple method. However, as plastic materials like nets and buoys were burned together, the problem worsened.



The volume was reduced, but it became harder to distinguish. The plastic that stuck to the rocks and fell off became more toxic microplastics.



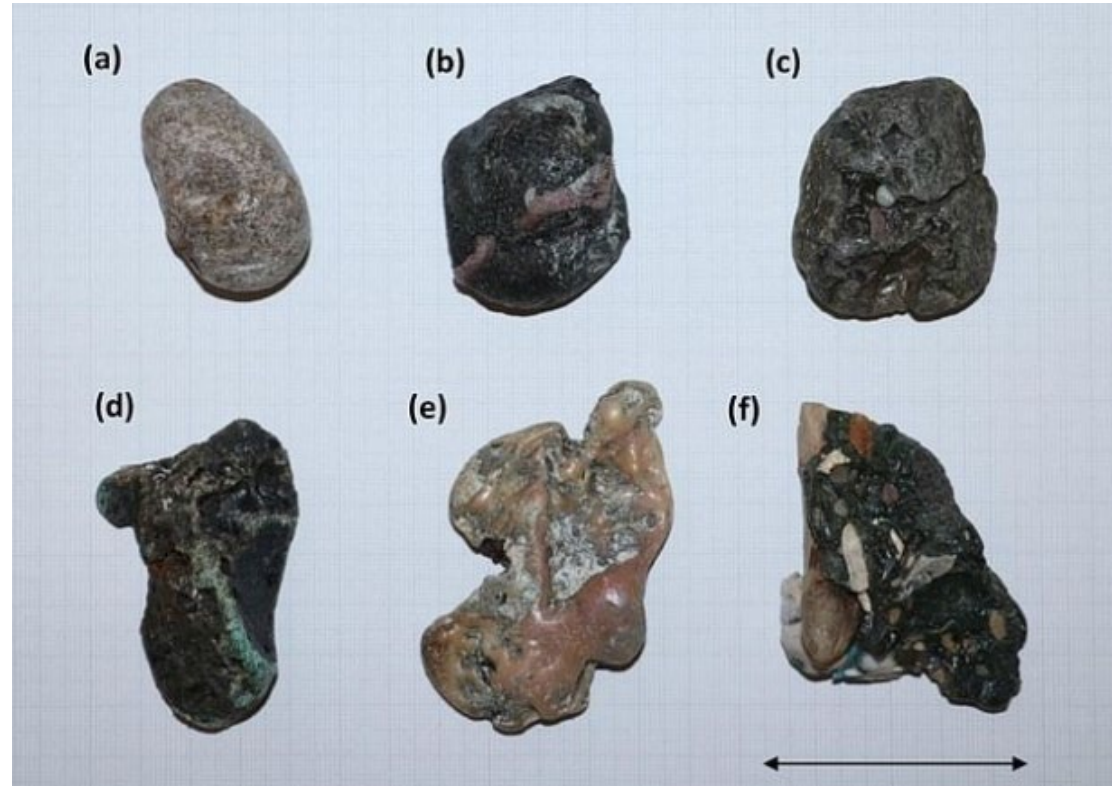
**The name of this fake stone, which I learned later,
was "pyroplastic."**



Pyroplastic was first introduced in the British media in 2019, and in Korea, it began to be known to the public through articles only in 2021.



**Research on pyroplastic is known to have started
in 2019 by a research team at the University
of Plymouth in the UK.**



According to the research, pyroplastic has been occurring for at least decades, but it has only been known to the world for a few years.



Interestingly, the pyroplastic found in the UK is gravel-shaped, while the pyroplastic in Jeju Island is basalt-shaped, which seems to be influenced by the regional environment.



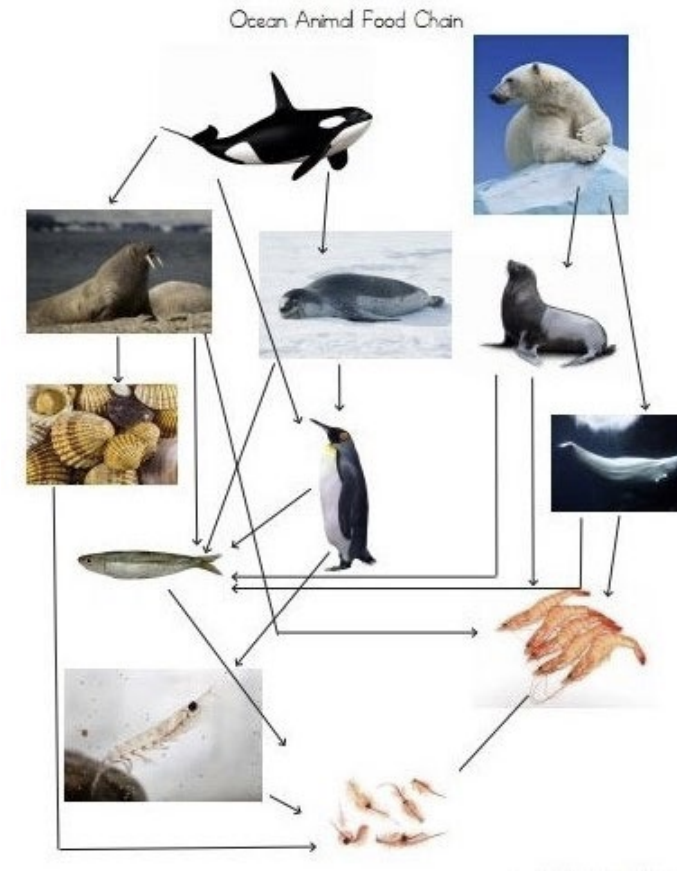
The UK researchers collected more 30 pyroplastic samples through SNS from Orkney Islands in Scotland, Kerry County in Ireland, and northwestern Spain.



The experiment revealed that they were made from carrier bags, supermarket packaging containers, plastic pots, takeout containers, etc.



It also revealed chromium, lead, and chemical additives that color plastics. The levels exceeded the EU safety standards of 2003



In particular, it was revealed that marine animals consume microplastic particles, which could enter the food chain, ultimately harming humans.



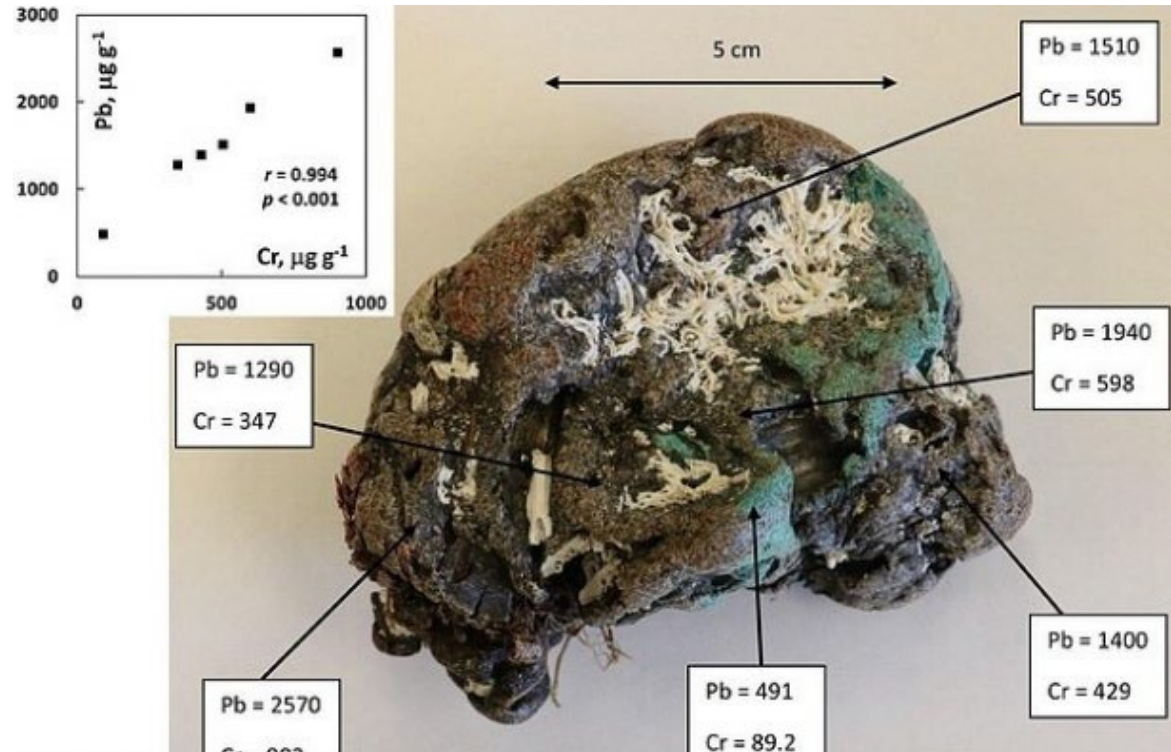
The 2022 paper by Fernanda Avelar Santos, a geologist at the Federal University of Brazil, is also drawing attention. She first discovered plastic stones on a volcanic island beach in June 2019.



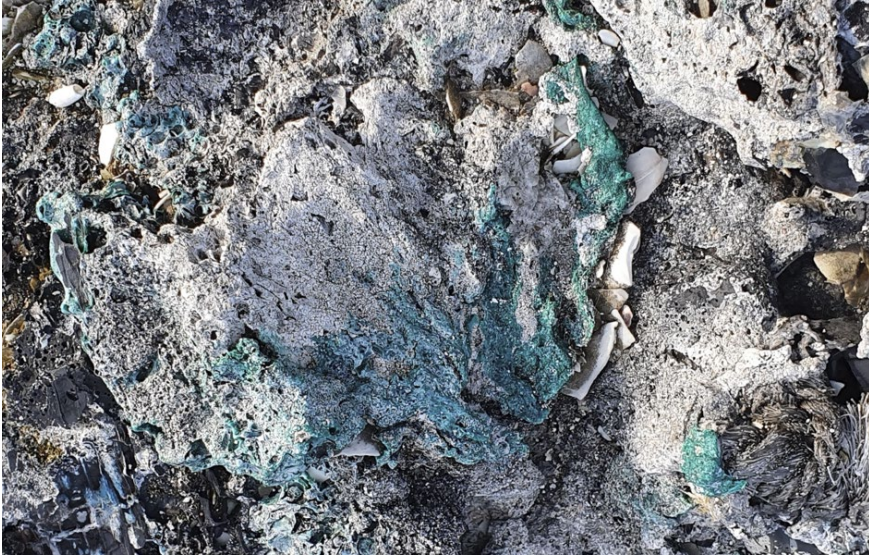
It is speculated that these were formed by melted plastic debris washed ashore.



The important point is that melted plastic waste ultimately affects marine life and the food chain, and the damage is increasing.



Strictly speaking, heat-melted plastics found on the coast are classified into three main academic terms.



There's 'plasticstone', where plastic melts and adheres to rocks, 'plastiglomerate', which combines with other natural materials like rocks and shells, and 'pyroplastic', which takes on a round shape similar to pebbles during erosion.



**All of these refer to thermoplastic resins (plastics)
that melt when heated and solidify when cooled.**



These materials were first brought to the world's attention in 2014, on a Hawaiian beach where Pacific Ocean debris accumulates.



Similar forms have been observed in Helgoland Island in the North Sea, Europe, Aves Island in the Caribbean Sea, Colombia, Indonesia, the coasts of Bangladesh, and streams in China until recently.



As a result of my investigation of Jeju Island's beaches for national marine debris monitoring, I found pyroplastic in 100% of the places where people visit.



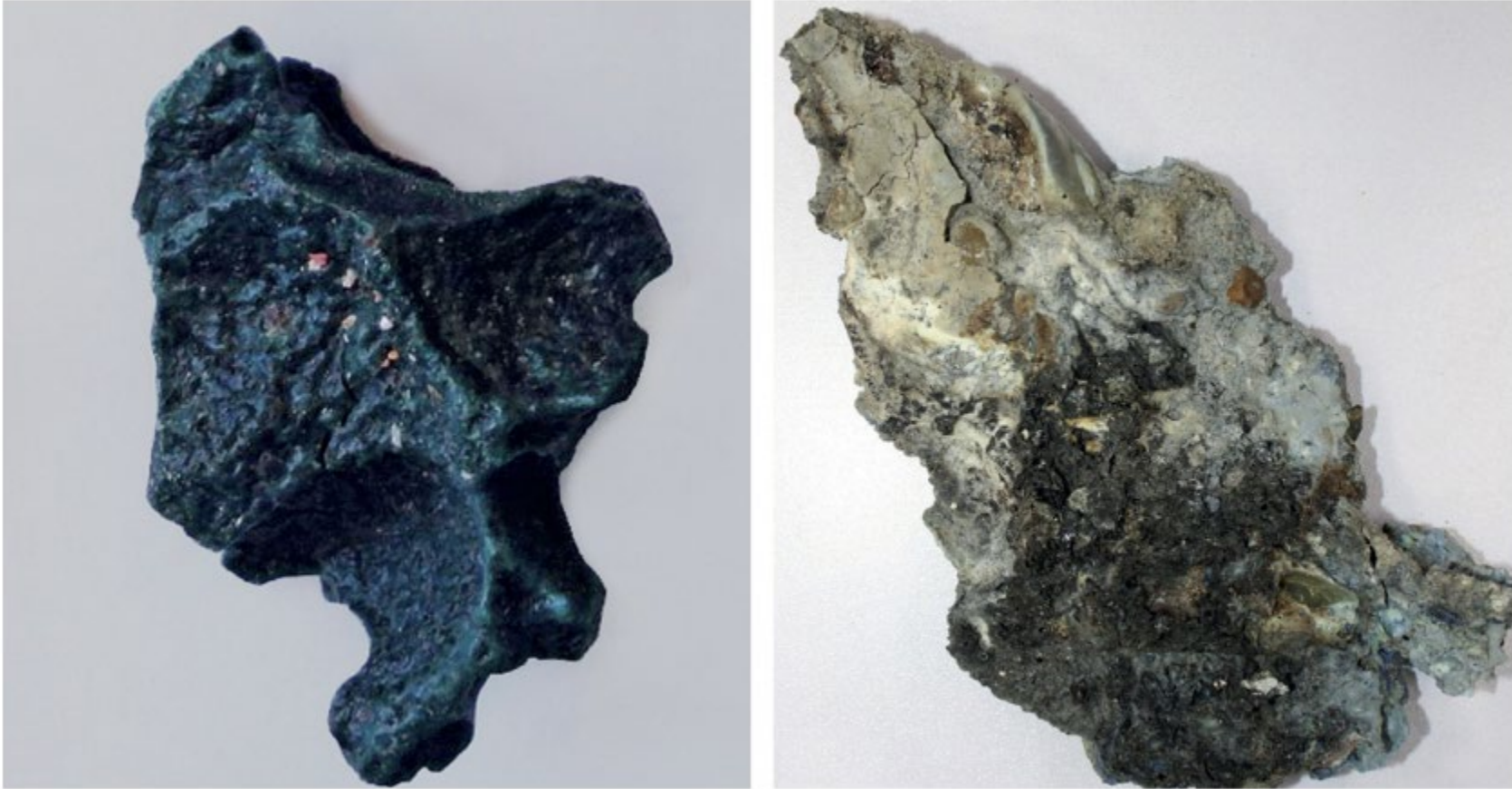
As a result of my investigation of Jeju Island's beaches for national marine debris monitoring, I found pyroplastic in 100% of the places where people visit.



There has been no accurate investigation into how long and how much plastic has melted and covered the coast.



**There are not many research papers
on pyroplastic worldwide.**



With research results showing that toxicity can increase up to 100 times, global investigation and response to pyroplastic seem necessary.



I initially used environmental art experiences to raise awareness of pyroplastic. I created miniature artworks and props using waste wood, sea glass, and plastic.



Then, thinking that I needed to publicize this issue more seriously, I started posting on blogs and held exhibitions with pyroplastic art creations.



Through broadcast interviews, I informed more people about this issue and was invited to environmental events in Jeju Island to present on pyroplastic.



I believe that artists should also consider social issues and propose alternatives.



This is probably possible because of my short eight-year journalism experience.



I also started working on picture books in 2021. This was my conclusion after considering new ways to convey environmental issues to children easily and interestingly.



I have worked on six picture books so far and hope that they will be read in various countries through translation.



꿈 나 다 환경 예술 학교

Another dream is to establish a small environmental art school in Jeju Island, where I live.



I wondered what it would be like if various experts from different countries could meet students online and nurture future environmental leaders.

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REPUBLIC OF KOREA

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I look forward to proposals from environmental leaders who share this vision.



**My wish is not a grand dream. I simply hope
That my family and our children can
live in a better environment.**



**I will continue to seek solutions in Jeju Island,
where I live. Let's support and unite each other
in our respective positions.**

Thank you !