URL:https://kim.macd.work

# FINAL PROJECT-ABOUT FISHERY POLLUTION

Taking fishery pollution as the research direction in marine issues, analyze why people ignore the harm of fishery pollution and how to arouse people's attention on this topic.

BO JIN MACD

### FMP BRIEF

#### WHAT

The topic I have chosen is the ocean and the title of my project is 'Breaking Down the Wall'. Through my research I have focused my research on marine fisheries pollution.

#### WHY

The reason why I chose marine fisheries pollution as my main area of research is that in my earlier research I had been focusing on plastic pollution, and it is undeniable that figures show that 8 million tonnes of plastic enter the ocean every year, which equates to a truckload of plastic waste dumped into the sea every minute. One of the main sources of plastic pollution, and the harm caused by the discarding of such discarded fishing nets and fishing gear already exceeds the harm caused by plastic pollution, and 46% of marine litter is made up of discarded fishing nets compared to the plastic straws we use, and these issues have become neglected. Secondly, commercial fishing is a necessary subsistence activity and fish is an essential source of nutrition in people's daily lives. It is these unchangeable issues that people intelligently choose to ignore, but the unsustainability of overfishing and ecological damage is becoming a growing problem in the management of environmental resources. This is why I chose this direction, we cannot ignore the problem because we cannot change it, so I wanted to show the damage it causes through my design.

#### WHO

My target audience for this project is 20-25 years old, and during my research I thought about whether to target everyone, because the ocean is not a personal problem or a problem for any one group, it is a problem that we all need to work on, because we all enjoy the ocean's resources. So in my interviews I have learnt that young people in this age group are more willing to learn about the issues, that they are better at using social media and websites than other age groups, and that I think this age group has more energy to engage in such activities, and that there are many channels through which young people in all fields can contribute.

#### HOW

At this stage, my initial idea of how to achieve the goals and issues set out is to present them in the form of a publication, in which I want to take photographs of fishery products and experiment with their original form to create a more visual impact and generate interest in the topic. The initial idea is to generate more ideas with experimental photography, and I will then select some key words from the main research material so that I can experiment in more specific directions.

# Background

Nowadays, the environmental problem is a complicated problem that we humans face. It contains many aspects, and the problem of marine pollution has always been one of the hot spots of global concern. When plastic pollution has become a hot spot for marine protection, we naturally overlooked another aspect-fishery pollution. Fishery is a necessary activity for subsistence, and fish meat has become indispensable in people's daily lives. Every year, the number of plastic bags consumed worldwide is 500 billion RESEARCH &COLLECTING

**Every minute, 1 million plastic bottles are sold globally** 

According to United Nations data, it is estimated that at least 8 million tons of plastic products leak into the ocean every year

One million seabirds and 100,000 marine mammals die every year due to plastic pollution



## **COVID-19**— Disposable Masks

With the surge in the use of disposable masks, gloves and other protective equipment, the fight against plastic pollution is being hit by the COVID-19 pandemic, but UN agencies and partners insist that if effective measures are taken, the amount of discarded plastic will be reduced It can be drastically reduced or even eliminated every year.



### 1) Pollution driven by huge increase in mask sales Discarded med-5) Promote planet and job-friendly alternatives

The promotion of mask wearing as a way to slow the spread of **Supplies** (https://www.un.org/coronavirus) has led to an extraordinary increase in the production of disposable masks: the UN trade body, UNCTAD (http://unctad.org/en/Pages/Home.aspx), estimates that global sales will total some \$166 billion this year, up from around \$800 million in 2019.

Recent media reports, showing videos and photos of divers picking up masks and gloves, littering the waters around the French Riviera, were a wake-up call for many, refocusing minds on the plastic pollution issue, and a reminder that politicians, leaders and individuals need to address the problem of plastic pollution.

### 4) Global cooperation is essential

In its July analysis of plastics, sustainability and development, UNCTAD came to the conclusion that global trade policies also have an important role to play in reducing pollution.

Many countries have introduced regulations that mention plastics over the last decade, an indicator of growing concern surrounding the issue, but, the UNCTAD analysis points out, for trade policies to be truly effective, coordinated, global rules are needed.

"The way countries have been using trade policy to fight plastic pollution has mostly been uncoordinated, which limits the effectiveness of their efforts, says Ms. Coke-Hamilton. "There are limits to what any country can achieve on its own."

### 2) A toxic problem



Manta rays in Ball, Indonesia navigate through plastic pollution., by UN World Oceans. Day/Joerg Blessing

If historical data is a reliable indicator, it can be expected that around 75 per cent of the used masks, as well as other pandemic-related waste, will end up in landfills, or floating in the seas. Aside from the Secondary environmental damage, the financial cost, in areas such as tourism and fisheries, is estimated by the UN Environment Programme (UNEP<sup>IP</sup>) at around \$40 billion

The UN Environment Programme (UNEP) has warned that, if the large increase in medical waste, much of it made from environmentally harmful single-use plastics, is not managed soundly, uncontrolled dumping could result.

The potential consequences, says UNEP, which has produced a series of factsheets on the subject,

include public health risks from infected used masks, and the open burning or uncontrolled incineration of masks, leading to the release of toxins in the environment, and to secondary transmission of diseases to humans.

Because of fears of these potential secondary impacts on health and the environment, UNEP is urging governments to treat the management of waste, including medical and hazardous waste, as an essential public service. The agency argues that the safe handling, and final disposal of this waste is a vital element in an effective emergency response.



Whilst implementing these measures would make a huge dent in plastic pollution between now and 2040, the Pew/ Systemig report acknowledges that, even in its best-case scenario, five million metric tons of plastics would still be leaking into the ocean every year. A dramatic increase in innovation and investment, leading to technological advances, the report's study's authors conclude, would be necessary to deal comprehensively with the

#### 3) Existing solutions could cut plastics by 80 per cent

problem.

### marine pollutio



However, this state of affairs can be changed for the better, as shown by a recent, wide-ranging, report on plastic waste published by The Pew Charitable Trusts, and sustainability thinktank Systemiq.

The study, "Breaking the Plastic Wave: A Comprehensive Assessment of Pathways Towards Stopping Ocean Plastic Pollution", which was endorsed by Inger Andersen, head of the UN environment agency UNEP, forecasts that, if no action is taken, the amount of plastics dumped into the ocean will triple by 2040, from 11 to 29 million tonnes per year.

## **Some Solution**

### **The Ocean Decade**

### **UN-endorsed outcomes for the Ocean Decade**

- A clean ocean where sources of pollution are identified and reduced or removed.
- A healthy and resilient ocean, where marine ecosystems are protected, restored and managed.
- A productive ocean supporting sustainable food supply and ocean economy.
- · A safe ocean where life and livelihoods are protected from ocean-related hazards.
- An accessible ocean with open, equitable access to data, technology and innovation.
- An ocean which is valuable on a social level, and where societies are committed to sustainable development of the seas.

Most ocean plastic starts off in rivers. From bubble curtains to googly-eyed trash wheels, here are four technologies designed to intercept river plastic before it gets to the sea.

Last month The Ocean Cleanup turned its attention to river plastic and launched the Interceptor, a floating device it claims can harvest up to 100,000 kilograms of plastic waste per day.

"To truly rid the oceans of plastic, we need to both clean up the regacy and close the tap, preventing more plastic from reaching the oceans in the first place," said Boyan Slat, founder of the organisation that has until now focused on trying to remove plastic already in the oceans.

However many experts believe that extracting plastic from the ocean is the wrong approach. "To be very honest, I don't believe that we're going to clean up the oceans," said Cyrill Gutsch, founder of Parley for the Oceans, in an interview with Dezeen earlier this year.

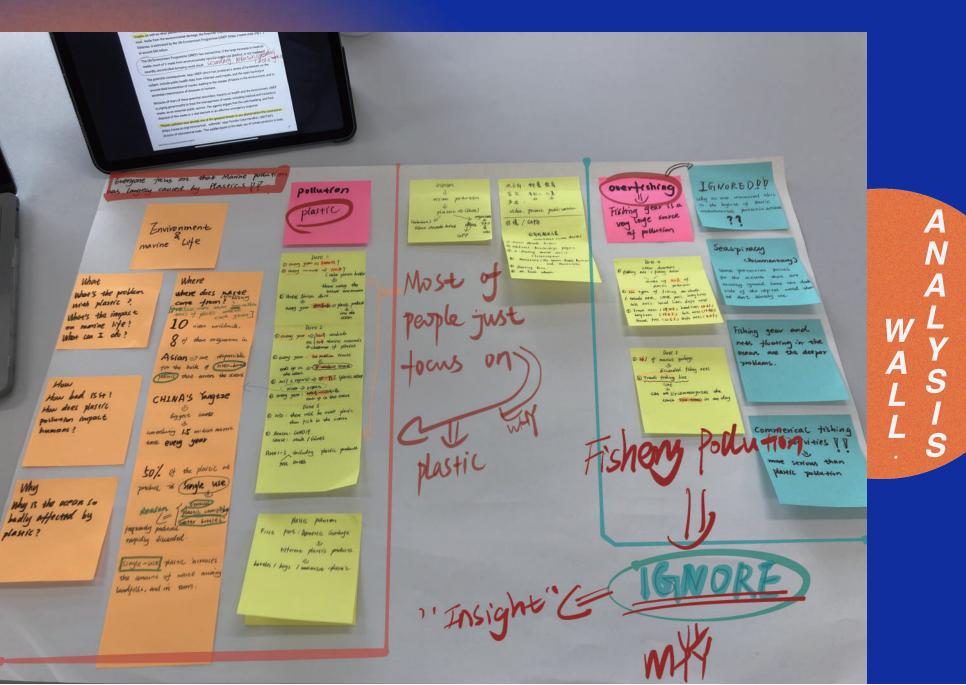
Of the 300 million tonnes of plastic produced every year, up to eight million tonnes ends up in the ocean.

A 2017 report published in the Environmental Science and Technology journal revealed that 88 to 95 per cent of the plastic waste transported to the ocean via rivers comes from just ten rivers. These include the Nile, the Yellow River and the Ganges.

An estimated 4.8 to 12.7 million tonnes of plastic end up in the oceans each year. Circular-economy charity the Ellen MacArthur Foundation estimates that by 2050 there will be more plastic than fish in the oceans.

The project aims to reduce the use of plastics in these industries and identify opportunities for recycling plastics to better protect the fragile marine environment and people's lives and livelihoods and it will help marine transportation and fisheries sectors promote best practices to prevent and reduce marine plastic waste, including lost or discarded fishing gear, to protect coastal and global marine resources.

## UPDATE



Commercial fishing gear is one of the most common ocean plastics reported in marine litter surveys. In the North Highlands it makes up 90% of ocean plastic removed by beach cleaners. [1][2]. Fishing lines, ropes and nets make up 52% of plastic pollution in the Great Pacific Garbage Patch (Figure 1) [3]. Discarded, lost, or abandoned, fishing gear in the marine environment is called Ghost Gear. This gear continues fish and trap animals, entangling and killing marine mammals and damaging vital marine habitats, making it the most deadly form of plastic pollution in the ocean [4]. Reasons for ghost gear becoming such a source of

**BABY DOLPHIN FOUND DEAD WITH** 

STOMACH FULL OF PLASTIC TRASH

plastic pollution include limited waste management infrastructure, lack of support and appropriate practical arrangements in harbours, for end-of-lif [6]. End-of-life Fishing Gear; worked and worn out commercial fishing gear ropes needs to be replaced every three to six months. As of yet there is no scheme to deal with this problem. NGOs such KIMO, Odyssey Innovation, a Makers working with together with manufactures, fishermen, harbours an are taking the initiative to collect and recycle discarded and end-of-life fish article we will identify the problems caused by ghost gear, and explore soli with end-of-life and discarded gear.

> GLOBAL CITIZEN

### KEYWORDS: ENTANGLING KILLING

The fishermen questioned (n=13) used a varieties of fishing methods and gear. The main type of gear used in Kinlochbervie harbours is trawl nets, creel pots, longlines, gill nets, hand lines and drift nets (Figure 1).

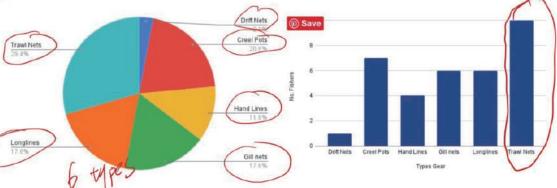


Figure 1. Proportions of fishing gear used by fishermen (right, n=13) at Kinlochbervie harbour, and distribution of gear used. Notably most fishermen practice more than one type of fishing activities, using a combination of trawling, creel pots and fishing with longlines.

The most destryctive fishing method — — trawling



46% of marine garbage is made up of discarded fishing nets. Compared with the plastic products we use daily, this kind of garbage dumps is more harmful to the ocean.

Traces of fishing gear can be found even in the most remote waters on the earth, and the length of the trawl fishing line circumnavigates the earth 500 times in one day.

The pollution caused by commercial fishing activities is far more serious than plastic pollution, and its damage is greater than the pollution caused by oil spills at sea.

## P R I M A R Y RESEARCH

...

### INTERVIEW (ONLINE) 视频说明介绍的形式吧

0:34

In some interviews with domestic friends, most of the feedback from these people about fishery pollution is that they don't understand and don't care.

0:57

果有-

士

Discuss face-to-face with roommates and classmates. The feedback we get is that everyone is interested in this aspect and wants to learn about it.





一种方式可以让你了解

渔业污染,你希望是什么样的方

下午2:49

想要了解这方面的信息吗

## INSIGHT

As a kind of subsistence industry, people choose to ignore the marine hazards caused by fishery

The webpages of major official organizations do not have enough coverage of fishery pollution

The main reason for the neglect of fisheries is that it is an industry that cannot be cancelled. However, we cannot completely ignore this problem because it cannot be cancelled. We need to raise people's attention to it from the aspects that can be alleviated. 'Engage in work related to the environment, so I usually pay attention to all aspects of environmental issues'

## ke Jin

25 yeas old Environmental worker

## PAIN

» Most people have an attitude that has nothing to do with them on environmental issues
» Fishery pollution does lack more official information

## GAIN

» Use some intuitive photographic pictures to get people's attention

» We must continuously improve people's awareness of environmental protection

» Popularization and promotion of the website

## *'I don't know much about fishery pollution, and I rarely see news about it.'*

## PAIN

» I don't know much about fisheries issues

» Have been concerned about the news of

nuclear waste water discharge

23 years old

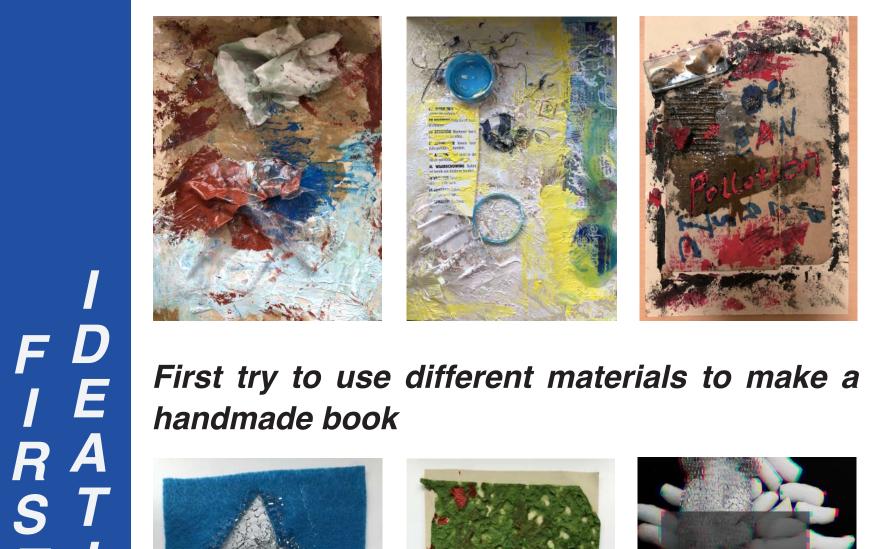
YUAN QIN

**International Student** 

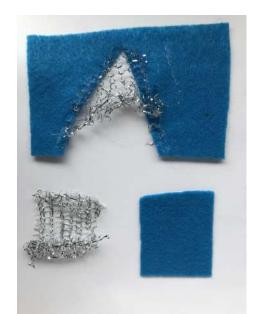
## GAIN

» Hope to understand through some video instructions

» Arouse awareness of marine protection



### First try to use different materials to make a handmade book







## ITERATION

To think about their hurt emotions and perceptions from the perspective of marine animals.



# Insight



Damage to the seabed caused by devastating fishing methods

Marine animals will be entangled to

death by discarded fishing nets

Entangled















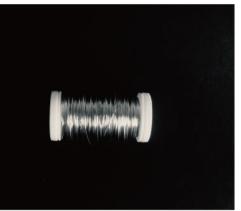














### **INSPRATION**



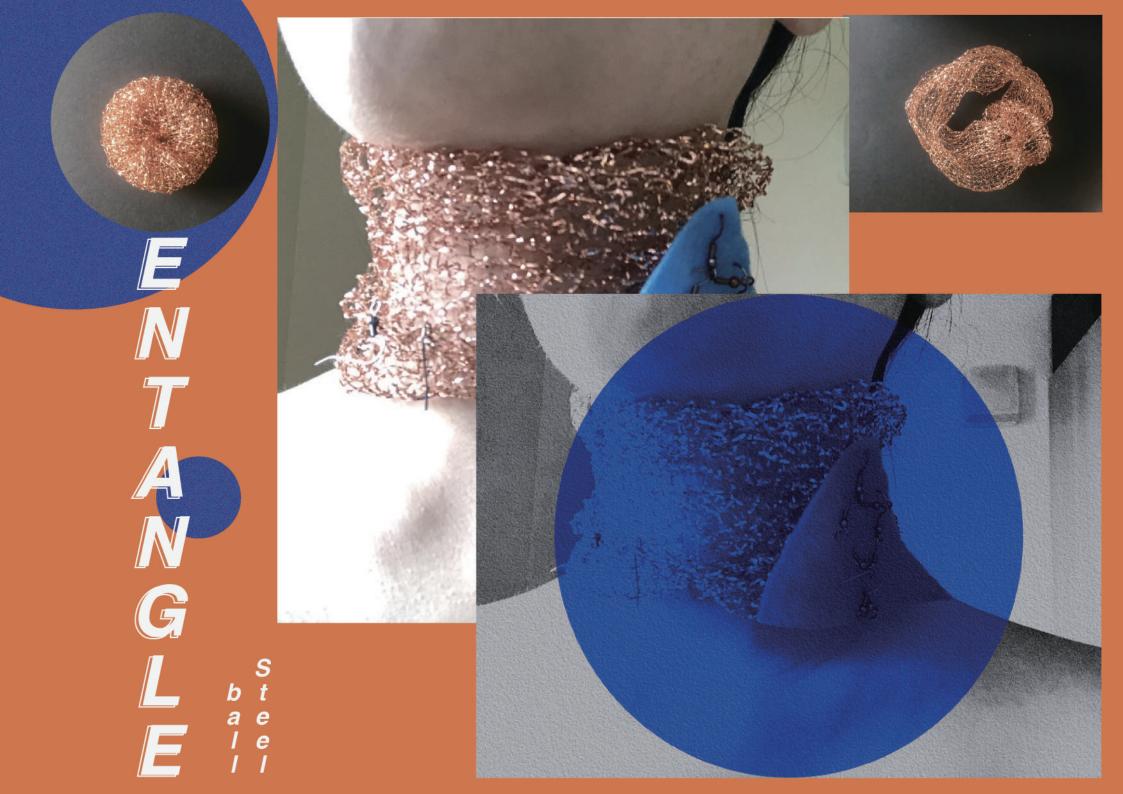














# DESTORY

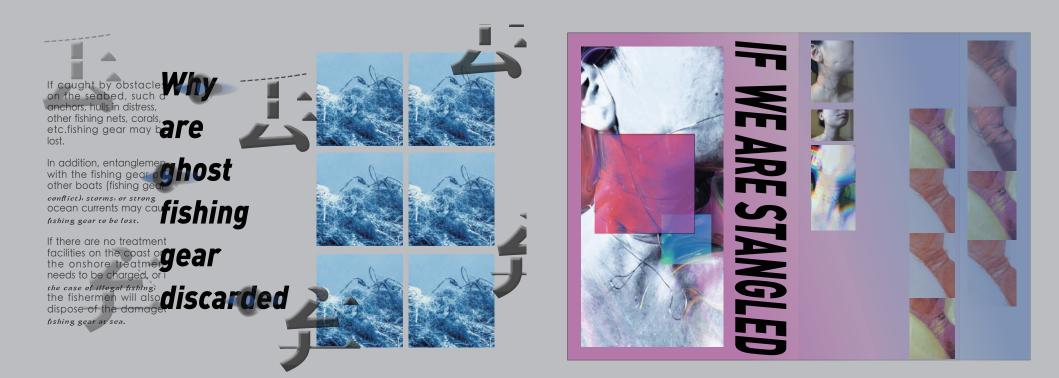


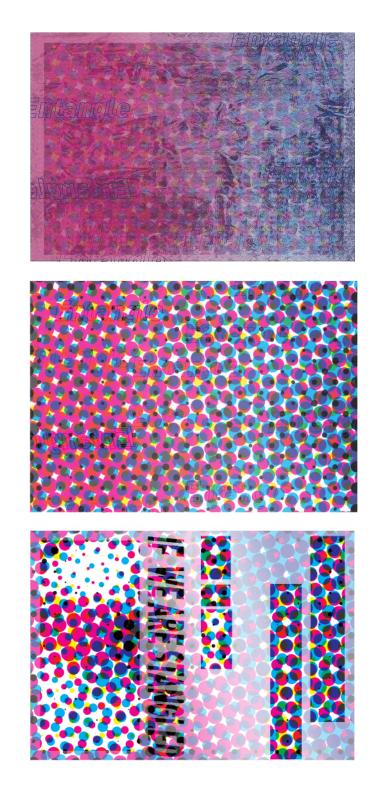


## FIRST INNER DESIGN&SKETCH



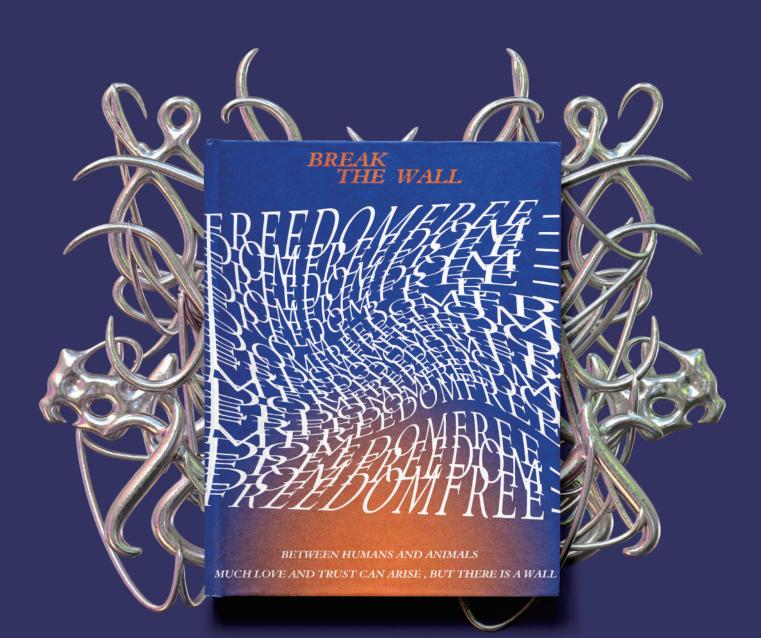


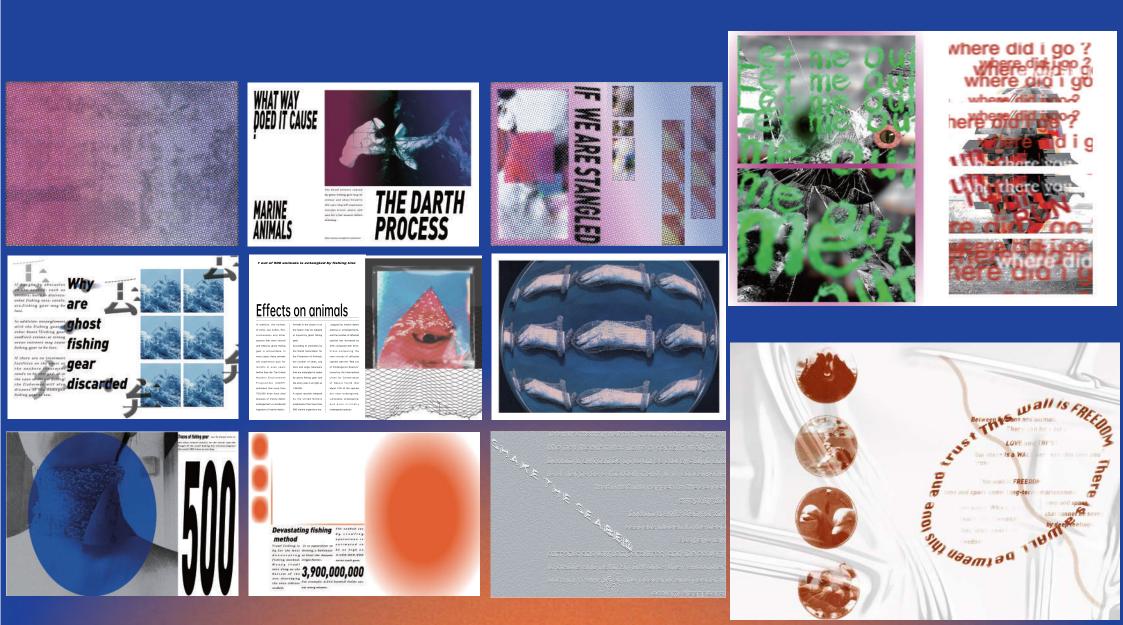






O U F CA **O**N ML Ε





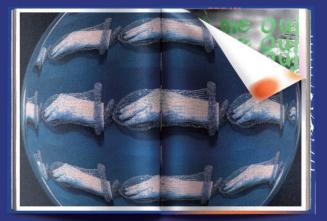
## Short film <u>https://www.youtube.com/watch?v=tF7Fl3bz5K0</u>

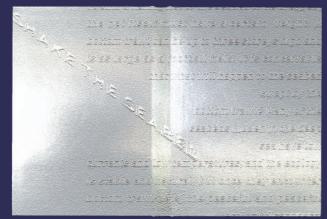


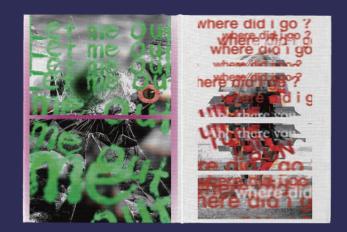
MUCH LOVE AND TRUST CAN ARISE, BUT THERE IS A WALL







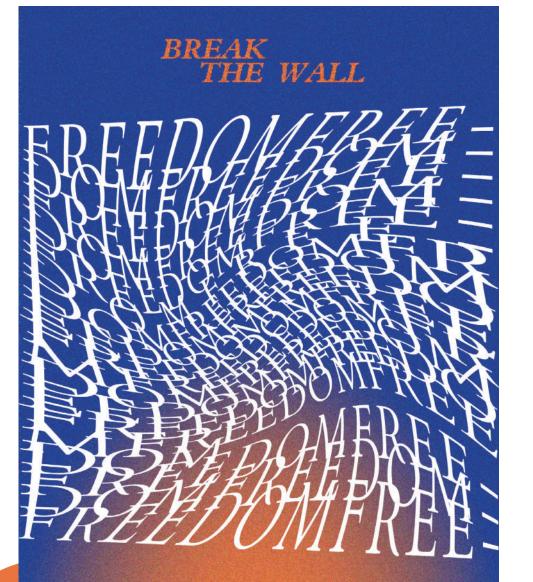




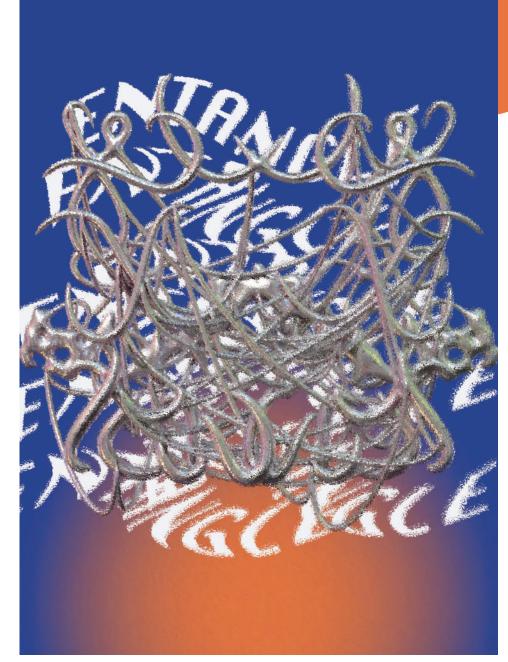


### **Short film** https://www.youtube.com/watch?v=x0F790Ol5S8

https://www.youtube.com/watch?v=No8UIZISB9A



BETWEEN HUMANS AND ANIMALS MUCH LOVE AND TRUST CAN ARISE , BUT THERE IS A WALL



## ENTANGLE

### BREAK THE WALL

## REFERENCE

1.chinadialogue ocean. 2021. 海洋塑料污染之忧. [online] Available at: <https://chinadialogueocean.net/14200-how-does-plastic-pollution-affect-the-ocean/?lang=zh-hans> [Accessed 13 December 2021].

2.Block, I., 2021. Four technologies tackling the problem of river plastic pollution. [online] Dezeen. Available at: <a href="https://www.dezeen.com/2019/11/29/river-plastic-pollution-technology/">https://www.dezeen.com/2019/11/29/river-plastic-pollution-technology/</a> [Accessed 13 December 2021]. 3.UN News. 2021. Five things you should know about disposable masks and plastic pollution. [online] Available at: <https://news.un.org/en/story/2020/07/1069151> [Accessed 13 December 2021]. 4.Bilibili.com. 2021. [online] Available at: <a href="https://www.bilibili.com/video/BV1CK4y1272s/?spm\_id\_-">https://www.bilibili.com/video/BV1CK4y1272s/?spm\_id\_-</a> from=333.788.videocard.0> [Accessed 13 December 2021]. 5.Sohu.com. 2021. 废弃渔网危害环境 芬兰展开回收计划\_海床. [online] Available at: <https://www.sohu-.com/a/361378586\_100063343> [Accessed 13 December 2021]. 6.Plastic@Bay. 2021. How do we stop fishing gear ending up in the ocean?. [online] Available at: <a href="https://ww-">https://ww-</a> w.plasticatbay.org/2021/02/24/how-do-we-stop-fishing-gear-ending-up-in-the-ocean/?v=79cba1185463> [Accessed 13 December 2021].

D--Describe objectively what I learned (Date and Analysis)

Nowadays, the environmental problem is a complicated problem that we humans face. It contains many aspects, and the problem of marine pollution has always been one of the hot spots of global concern. When plastic pollution has become a hot spot for marine protection, we naturally overlooked another aspect-fishery pollution. Fishery is a necessary activity for subsistence, and fish meat has become indispensable in people's daily lives.

According to estimates by the 'Food and Agriculture Organization of the United Nations, more than 640,000 tons of fishing gear are discarded in the sea each year, equivalent to the weight of 50,000 double-decker buses'. Some fishing nets abandoned in the ocean are larger than a standard football field after unfolding. These abandoned fishing gear in the ocean cause at least hundreds of thousands of marine animals such as whales, dolphins, seals, and sea turtles to die every year; at the same time, the fishing gear that sinks into the seabed will change the living environment of microbes on the seabed and block the crevices of coral reefs. It will cause local hypoxia and cause the death of marine animals. And discarded fishing nets are only one aspect of fishery pollution. Commercial fishing, as a necessary activity for fishery to maintain a livelihood, has also caused great harm to the ocean. Overfishing will make us have no fish to catch in the future.What's more, the method of fishing has become a fatal problem that destroys the ocean, and the most devastating method of fishing is trawling. Fishermen use heavy trawl nets to drag the seabed and destroy the seabed, which is equivalent to driving a bulldozer to level the Amazon virgin forest. The seabed cut by trawling operations is estimated to be as high as 3.9 billion acres each year, which is equivalent to cutting 4,316 football fields per minute.

Through these data, I learned that the harm that fisheries brings to the ocean is not only in pollution, but also in different degrees of harm to marine life, the seabed and the environment in which marine life lives.

So my tutor suggest me kept trying new ideas to express my point of view. And then I watching different types of documentaries and books, I concluded two keywords entanglement and destruction. Based on these two keywords, I collected some information about Fishing gear items, and through experimental attempts to change the shape of these items, using myself as an animal to experience the feelings of fishing gear, and taking some photos to provide a good prerequisite for my project.

#### I – – Interpret the insight (Insight and Source)

'Although sea-based sources make a significant contribution to micro plastic pollution in marine areas, many studies focused only on land-based sources, which are considered the main sources of micro plastic pollution.Fishery activities, involving capture fishery and aquaculture, are important sea-based sources that should receive more attention'.

From this perspective, whether it is people or official big data, it is common that the main pollution source of people comes from land, and the reasons why fishery pollution is ignored by people can be analyzed from the following two aspects:

1.In the documentary 'Fishery Conspiracy', the director mentioned that '46% of the garbage belt in the Pacific is made up of discarded fishing nets. You can find traces of fishing gear even in the most remote waters on the planet. These rubbish and the Marine Conservation Organization's official website are silent on how to deal with fishing gear. On the websites of these organizations,

99% of the content is mainly to resist plastic straws. The plastic straws discharged into the sea only accounted for 0.03% of all plastic waste.'It can be drawn from this that one of the reasons that people ignore is that the various ocean protection organizations mentioned too little information in this regard, and people cannot Get more effective information from official sources.

2.On the other hand, 'Similar to many Southeast Asian countries, industrialization and urbanization in the Beibu Gulf area are of a low degree, and fishery is a pillar industry, but it lacks relevant effective management measures'(*Xue, B,2020*).At the same time, the Marine School Sylvia said, 'if people continue to fish wild waters in the present, it is expected that by the middle of the 21st century, commercial fishing activities will cease to exist, because there will be no sufficient catches at that time'. In fact, people don't know how seafood is caught ashore, and only a few people are only concerned about whether marine mammals and seabirds have been slaughtered during the fishery production process. But in fact, the killing of marine mammals and devastating fishing methods in the fishing process have caused great harm to everything in the ocean.

Therefore, not only are some of the official marine conservation organizations that we are familiar with must fill in the vacancies in this area, people must also learn more about the problems behind fisheries, and because fisheries is a livelihood industry and a necessity in people's daily lives.Fundamentally, we cannot stop fishing,this requires people to spontaneously change their neglected attitudes so that they can do their part in marine protection. At the beginning of the project, because of the wide range of topics, I was still unable to determine what form to use to convey my thoughts. Therefore, I had not made any progress during the preliminary research process. After communicating with my tutor Danny several times, I start trying to see more works of art and change your mind to look at other aspects of this topic.

After determining the main direction and themes, I started to search various projects to develop my own ideas. In fact, most of the projects are promoted by web pages, and I think web design sometimes cannot really attract people's attention. So finally decided to use the form of publication to arouse people's attention and empathy on this topic, this led me to design a book that was interactive and visually strong. When people are no longer sensitive to words, strong visuals are more likely to get people's attention, so I included my own photography in the book, and through my own attempts to express the emotions I experience and at the same time convey them to the audience. There is always a wide range of topics that people in different fields can see and put a little bit of power into their own. This is what I learned in this project.

P--Plan how this learning will be applied in practice (Output and Summarize)

In this project, I mainly considered the overall style and text layout design. The difference is that I tried to use the Grid Layout Design Style to unify the overall layout. 'Grid layouts are used by designers to spatially organise user interfaces when sketching and wireframing' (Dayama, N.R, 2020). Based on the layout under the grid system, using visual imbalance and grey scale disproportionate presentation to combine text and images based on the use of a grid system for the layout; secondly, I used bold and original photographic works as the background for the pictures, and re-evaluated the image processing methods,

while ensuring the visual balance of text and pictures, and also to protect the information I want to convey. So in the process, I experimented with this style to create a clear and aesthetically pleasing layout and to enhance the viewer's comfort.

However, I also encountered problems with the printing process, as I tried various types of binding but was unable to achieve the perfect result due to technical limitations, and there were many errors in the printing of the layout, this process also took a long time. Although the finished product was successfully completed, the effect did not meet the perfect expectations. More, there was a lack of testing with users, and some interactions in the book could not be shown because of the inability to conduct offline exhibitions. These are also the shortcomings of the project.

Throughout this project I kept the idea of exploring new directions to delve deeper into my problem, and through constant iteration and research to find a more accurate direction. Interaction design as a subject I am studying at this stage, how to use critical thinking to solve problems and create new things is my biggest gain, at the same time, I have seen a lot of art exhibitions while doing innovation, through watching different types of art exhibitions, also let me see and learn how others express their works in different ways from different perspectives, there are a lot of ways that I can't think of, in my future study In my future studies or career I should also learn to experiment with more forms of creative work.

So far, the end of this project announces that my graduate study is also coming to an end, but I know that I have only just begun my journey in design and I still have a long way to go. I am very grateful to my tutor——Danny,for all his help and guidance during this year, and every time he has always let me develop my own ideas and given me many good examples to learn from.This

stage will also be an unforgettable experience in my life. More importantly, I will maintain an attitude of exploration and innovation to deal with the challenges that I will face in the future. This is also my biggest reward of this year.

#### Reference:

*Xue*, B., Zhang, L., Li, R., Wang, Y., Guo, J., Yu, K. and Wang, S., 2020. Underestimated microplastic pollution derived from fishery activities and "hidden" in deep sediment. Environmental science & technology, 54(4), pp.2210-2217.

Bilibili.com.2021.[online]Availableat:<https://www.bilibili.com/video/BV1CK4y 1272s/?spm\_id\_from=333.788.videocard.0> [Accessed 13 December 2021].

Dayama, N.R., Todi, K., Saarelainen, T. and Oulasvirta, A., 2020, April. Grids: Interactive layout design with integer programming. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (pp. 1-13).