

**Forum:** General Assembly 1 (DISEC)

**Issue:** Question of the prevention of an arms race on the seabed and the ocean floor

**Chair:** Audrey Hsieh, Head Chair

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## Introduction

As technology rapidly advances, we have become more and more dependent on our electronics. But with this dependence on items such as iPhones, laptops, or even electric vehicles, we have also grown our dependence on rare earth elements, which are essential to the operation of these devices, effectively fueling a race for these minerals around the world. Thus, as the demand for rare earth minerals grows and its supply on land rapidly decreases, we are bringing about a whole new sector: deep-sea mining and seabed exploration.

The seabed and ocean floor is now being sought after for its marine resources, whether living or nonliving. Various governments, corporations, and institutes have started on their race towards greater domination of the seabed. Our oceans, holding 1.3 billion cubic kilometers of water and making up 71% of Earth's surface, currently remains vastly unexplored. However, more and more are discovering that our oceans can be used for mineral extraction, oil drilling, and fishery management. Yet, we must realize that expanding our attention onto the seabed also comes with dangers of weaponry emplacement.

There has been the Antarctic Treaty, the Outer Space Treaty, and the Latin American Nuclear-Free Zone, which have all sought to prevent conflict and promote peace. Now, as more nations seek to expand beyond their own territorial waters, we must address the question of how we can and we must ensure peace and security.

## Definition of Key Terms

### Seabed

The seabed refers to the solid surface of the Earth that lies beneath the ocean or the bottom of the ocean. This classification is not determined by the depth of the ocean, meaning that all floors of the

ocean are known as seabeds. Although we are still exploring and learning about the seafloor, we do know that they are not completely flat, with a variety of features including mountains and canyons.

### **Continental Shelf**

The continental shelf is the edge of a continent that lies under the ocean, acting as the actual boundary of a continent. The shelf extends from the coastline to the shelf break, where it descends towards the ocean floor. These gently-sloping plains are mostly covered by shallow waters, serving as a home to many organisms and a rich feeding ground for sea creatures.

### **Coastal States**

Coastal states are understood to be states with a sea coastline or states that are not landlocked. These states play an important role in global maritime regulations, helping to ensure order and safety at sea. These responsibilities may include protecting the marine environment, guarding against pollution, and conserving the ocean's living resources.

### **High Seas**

High seas dictate all parts of the ocean around the world that are not part of the territorial or internal waters of a state. For centuries, there have been disputes arising from states asserting sovereignty over certain parts of the high seas. Thus, freedom of the high seas is now recognized to allow nations to freely navigate, fish, fly aircraft, and lay submarine cables and pipelines.

### **Territorial Seas**

In international law, territorial sea marks the area immediately alongside the shores of that state, extending to a limit of 12 nautical miles from its baseline. In this zone, the coastal state has full sovereignty over the airspace, seabed, and subsoil, reserving full rights to the resources within the area. Territorial seas should be distinguished from high seas, which is common to all nations, and internal waters, which are bodies of water completely surrounded by national territory.

### **Exclusive Economic Zones (EEZs)**

Introduced at the Third United Nations Conference on the Law of the Sea, an exclusive economic zone is an area of the sea which extends 200 nautical miles from either the coast or seaward boundaries of a state. Within this area, nations have full jurisdiction over the exploration and exploitation of marine resources, though holding the responsibility to conserve and manage it. This right may or may not include fishery management authority.

### **Baseline (sea)**

A baseline refers to the line which marks the boundaries of a state's territorial sea, and in some cases, other maritime zones, along the coast. A sea baseline typically follows the low-water line of a coastal state, though this can be altered based on the geography of each coastline, with special conditions such as deep indentations or fringing islands.

### **Contiguous Zone**

A specified maritime zone beyond a state's territorial sea where they are allowed to exercise control to prevent infringements of customs, sanitary, fiscal, and immigration regulations. Unlike territorial seas, contiguous zones do not automatically exist and must be claimed.

### **Deep-Sea Mining**

Deep-sea mining is the process of extracting mineral deposits from the area of the ocean below 200 meters. Due to growing demands for minerals and an expansion of the commercial mining industry, there is increasing interest in mining operations in the deep sea. However, the damage and pollution to the seafloor as a result of these activities can have dangerous, long-term effects on marine species.

### **Submarines**

Submarines are warcrafts capable of independent operation underwater. A specific type of submarine, the nuclear powered submarines, can be especially dangerous for warfare since they can greatly reduce the distance from enemies, increasing accuracy while maximizing protection from detection. Recently, there has also been further advancements, with the idea of submarines with wheels, allowing for better cover and concealment.

### **Naval Mines**

Naval mines are explosive devices laid in the water, on the seabed, or in the subsoil. These weapons have the potential to damage, sink, or interfere with ships navigating around the area. Able to be used for both offense and defense, these devices can also create enormous flood-waves, being particularly effective against densely populated shorelines.

### **Polymetallic Nodules**

Polymetallic nodules are isolated chunks of rock, ranging from the size of a golf ball to that of a grapefruit, containing metals such as copper, manganese, nickel, and cobalt. These primary metals found in nodules are crucial materials in modern batteries, essential for iPhones, laptops, and electric vehicles. In addition, nodules tend to be easier to mine than other seabed deposits, as they are typically found right below the sediment of the seafloor.

## **Innocent Passage**

Innocent passage can be defined as a passage that does not impede upon the safety, security, or good order of a coastal state. All foreign vessels may traverse any coastal state's territorial waters in innocent passage as long as they travel continuously, not stopping or anchoring unless in excruciating circumstances. Innocent passage differs from transit passage, which refers to navigation or overflight in international waters.

## **Seabed Arms Control Treaty**

The Seabed Arms Control Treaty, signed on February 11, 1971, and put into effect on May 18, 1972, is a multilateral agreement between 94 parties forbidding any weapons of mass destruction, launching installations, or any other facilities in relation to such weapons from being placed beyond a nation's own territorial zone. The treaty allows for verification from other state parties for compliance, entailing inspections and the publishing of reports.

## **Background Information**

### **History**

There has been a lot of lead up to where we are now, as activity and competition on the ocean floor starts to rise again. Beginning from establishing 'freedom of the seas' to maritime disputes to multilateral agreements, the international community has been through a lot.

#### ***Freedom of the Seas***

The concept of the "Freedom of the Seas" originated in 1609 by Dutch jurist Hugo Grotius. It is framed around the mutual agreement that the high seas in time of peace are open to all nations and cannot be subjected to national sovereignty. However, this concept was not widely accepted until the 19th century, in a time when laissez-faire<sup>1</sup> was growing in popularity and maritime expansion was reaching its peak. At the end of the 1800s, with all nations reaching consensus, activity on the seas were able to flourish.

#### ***Advances in Oceanographic Technology***

By the second half of the 20th century, states started wanting more. The demand arose wanting increased security, exclusive fishing privileges, protection of marine resources, and rights to exploit resources. Yet, advancements in technology also stirred up growing fears that disputes

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<sup>1</sup> political ideology believing in freedom of the people to do what they choose, opposing government interference in economic affairs unless absolutely necessary

could potentially involve military weapons. Thus, there was a growing interest in establishing regulations amongst all nations.

### ***International Agreement***

The road towards an international agreement was not a fast one. The first step was taken in 1967 when an ad hoc committee was created following the proposal of the UN Secretary-General. This committee worked in cooperation with the Eighteen Nation Committee on Disarmament (ENCD) and later successor Conference of the Committee on Disarmament (CCD), to maintain international peace and security on the ocean floor. Two years later, in 1969, President Nixon initiated the first talks about a peace treaty, telling the American delegation to ENDC to open discussion around the banning of weapons on the seabed in order to “prevent an arms race before it has a chance to start”.

Later that year, the Soviet Union and the USA each presented their own treaty drafts, though coming down to two main areas of disagreement, limitations and verification. However, with much discussion, a consensus was reached, and the Seabed Arms Control Treaty was formally signed and enforced.

## **Potential of the Ocean Floor**

### ***Resource Mining***

Deep-sea mining aids in our transition away from fossil fuels, especially as there are much more rare earth metals to be found on the seabed than on land. In addition, mining on the ocean floor avoids problems such as deforestation, pollution, and child labor, though creating a new series of problems of its own, including out of many, habitat damage.

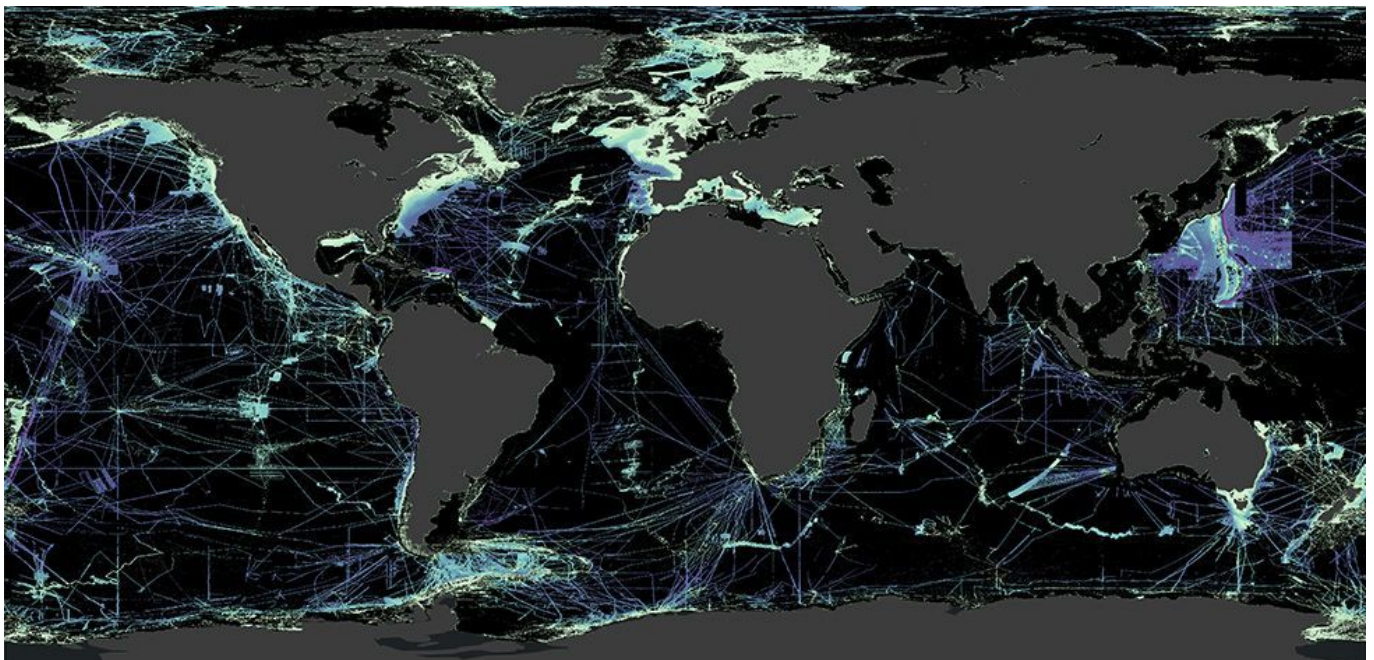
As metals found on the ocean floor are essential to our everyday lives now, we have an imperative need to find new sources of supplies apart from our sole reliance on land mining. International relations also take a play in this race, because China currently holds the largest supply of rare earth elements around the world, inciting motivation in other nations to compete in this rising industry. In fact, a number of countries have already launched deep-sea mining projects and others are quickly catching up as well.

### ***Military Surveillance***

A large leverage on the seafloor is proper maps, which can not only further research but also aid the military. Currently, we have not explored much of the ocean floor, with only 19% mapped in comparison to the 99% of the Mars surface that has been mapped. Thus, any

information on the seafloor can be held as a great advantage against other nations. For example, the Pacific Ocean is a region that is rich in minerals, though high in geopolitical tensions between China and the US. If necessary, either side could carry out attacks on civilian infrastructure, finance, and cultural systems. This could be done through the data collected, such as with seabed sensors to track shipping routes of internal trade or the manipulation of information to mess with enemy strategies.

In general, attack from under the sea is hard to detect and allows for enemies to get extremely close to shore. Thus, as military weaponry continues to develop to be more efficient, an arms race on the seabed poses a significant threat. Currently, any vessels can attach data-loggers to sonar and navigation equipment to easily attain information on the ocean floor. For example, Ocean Infinity, a UK-US company, sends robot vessels to collect data as their ships travel, with a significant achievement being their mapping of the Drake Passage between South America and Antarctica, which is usually less traveled. In a world that is rapidly striving to innovate and advance, the potential of the ocean floor for military expansion should definitely not be underestimated.



*Caption #1: Data collected from the Nippon Foundation-GEBCO Seabed 2030 Project, with the black showing where we still need modern measurements at a reasonable resolution*

## Major Countries and Organizations Involved

### The United States of America

The USA was one of the first to bring up discussion around forbidding emplacement of weapons of mass destruction on the seabed. Around the same time, in 1970, the United States also established its National Oceanic and Atmospheric Administration (NOAA) to guide usage and protection of marine resources and to conduct research to better understand the environment. However, the US has not ratified the UN Law of the Sea yet, meaning that it cannot get an exploration license or participate in deep-sea mining. Recently, the US has tried to enable communication technologies between the seabed and space. The navy has initiated a Seabed to Space project that would build intelligence, surveillance, and reconnaissance (ISR) systems in order to maintain reliable communication, surveillance capabilities, and handle growing threats.

## Russia

Along with the US, Russia was involved in early talks around a treaty. Since then, Russia has begun to rapidly develop its technology, installing long-range strike systems on naval vessels and placing acoustic sensors to survey wreckage and collect information. One notable event in Russia's seabed exploration happened in 2007 when Russia planted a flag beneath the North Pole, which is rich in oil and gas reserves, to mark its seabed extension. Russia also exerted its presence in 2015 when they interfered with the completion of a SweLit underground power cable in the Baltic Sea, provoking fear of their capabilities to destroy communication links. Russia has not stalled its efforts, with the Krylov State Research Center currently working with the National Institute of Ocean Technology in Chennai to develop technologies for deep-sea mineral mining, combining India's advantage in the Indian Ocean region and Russia's expertise regarding ocean floor activity.

## Namibia

Namibia's government has had a long partnership with the De Beers Group, an international corporation known for diamond mining. In 2018, they were able to extract 1.4 million carats of minerals from the coasts of Namibia, and in 2019, the corporation commissioned several Autonomous Underwater Vehicles (AUV) that can directly scrape the surface of the seafloor and loosen sediment twice as quickly. Since only 2% of the licensed area has been depleted, the Namibian government and corporations in the region are likely to continue seabed exploration.

## Japan

Japan holds an immense advantage off the coast of Okinawa, where remains of extinct hydrothermal vent systems can be found. These vents are thought to contain enough zinc to supply Japan for a year, so the Japanese government has initiated a research project in 2013 to explore these deposits, utilizing their own, newly developed technique of acoustic wave deflecting to get subsurface images. More recently, in July of 2020, the Japan Oil, Gas & Metals National Corporation (JOGMEC) conducted the world's first successful excavation test of a cobalt-rich crust on the seabed of Japan's



exclusive economic zone, collecting 649 kilograms of cobalt and nickel rich seabed crust. The Japan Agency for Marine-Earth Science and Technology has also been working with the Nippon Foundation on the GEBCO Seabed 2030 Project to produce high resolution, accurate seafloor maps, which can be really important for future projects.

## South Korea

South Korea had one of its first projects on the seafloor in 2002, when they acquired rights to the Clarion-Clipperton Zone, which is one of the richest regions for mineral extraction, from the International Seabed Authority (ISA). This greatly facilitated and set Korea on the path towards exploration and the development of technology. Later, in December 2015, the state-run Korea Institute of Ocean Science and Technology (KIOST) conducted the world's first verification test of a deep-sea manganese nodule lifting system, allowing for the transports of these nodules through a pipe from the seafloor to a mining ship at the ocean's surface. Korea continues to want to carry out further exploration, especially in its easternmost territory, Dokdo, with plans to collect samples from the ocean floor.

## China

Currently, China is the world's main source of rare earth elements. However, this has not stopped them from exerting their presence on the ocean floor as well. China has already stirred up the tension with claims on almost all of the South China Sea, converting low-lying reefs to military installations. China is also leading in the race for seabed mining, holding 5 out of the 30 contracts that ISA has signed with governments, research institutions, and commercial entities, the most that anyone holds. The country continues to work with the ISA, signing a deal to establish a deep-sea training and research center in Qingdao.

## Canada

The Canadian company, Nautilus Minerals, which was the first company to receive a deep-sea mining license, attempted to mine national waters off Papua New Guinea for copper and gold. However, they were not successful and eventually went bankrupt. DeepGreen, a Canadian start-up, was then founded as a reaction to Nautilus Minerals. They believe in processing ocean nodules into base metals with near-zero waste and exploring base metals as more ethical alternatives to land-based mining, aiming to reduce environmental impact overall. In 2020, DeepGreen pioneered a new source of critical base metals derived from nodules, being a relatively large accomplishment for both the company and the nation. The Canadian government itself launched a mission to map the Arctic seabed in 2014, competing with Russia and Denmark, which are all claiming that the ridge is an underwater extension of their own continental shelf. However, within the country's borders, Canadian legislation currently prohibits deep-sea mining from being conducted.



## International Seabed Authority (ISA)

The International Seabed Authority is an international organization established under the UN Convention on the Law of the Sea, with its headquarters based in Kingston, Jamaica. The autonomous organization's primary function is to organize, regulate, and control mining and all-related activities in 'the Area', defined as the international seabed beyond the limits of national jurisdiction. The main authority of the body lies in the assembly, which comprises all 168 members of the ISA, which holds annual plenary sessions. The ISA's major work consists of enforcing regulations governing polymetallic nodules, including defining areas for contractors to explore and holding annual workshops on different aspects of seabed exploration, with an emphasis in marine conservation. The International Seabed Authority's chief initiatives include the Endowment Fund, which aids and supports scientists in deep-sea research, as well as the DeepData Database, which hosts all data collected on exploration activities.

## International Tribunal for the Law of the Sea (ITLOS)

The International Tribunal for the Law of the Sea is an independent judicial body mandated by the UN Convention on the Law of the Sea that consists of 21 independent members. Their main role is to adjudicate disputes regarding the interpretation or application of the Convention. The ITLOS has dealt with multiple cases across the world, including tackling boundaries between nations, interference or detention of naval vessels, land reclamation, operation and regulation of shipping, and the release of ships and crews that are arrested or detained in foreign ports.

## Timeline of Events

<b>Date</b>	<b>Description of event</b>
February 24 - April 29, 1958	First United Nations Conference on the Law of the Sea (UNCLOS I)
December 18, 1967	UN General Assembly establishes an ad hoc committee to ensure the peaceful use of the seabed and ocean floor
March 18, 1969	President Nixon suggests a discussion of an international agreement prohibiting emplacement of weapons of mass destruction on the seabed
December 7, 1970	Seabed Arms Control Treaty approved
1973-1982	Third United Nations Conference on the Law of the Sea (UNCLOS III)
December 10, 1982	United Nations Convention on the Law of the Sea signed

## Relevant UN Resolutions and Treaties

- United Nations Convention on the Law of the Sea (UNCLOS), 10 December 1982
- Seabed Arms Control Treaty, 7 December 1970 (A/RES/2660(XXV))
- Convention on the Continental Shelf, 29 April 1958
- Convention on the High Seas, 29 April 1958

## Possible Solutions

**Further enforce and ratify international agreements**, namely the United Nations Convention on the Law of the Sea (UNCLOS) and the Seabed Arms Control Treaty. These regulations help to set a unified, international standard for all to abide by and allows for a proper method in dealing with disputes. Currently, the UNCLOS is only ratified by 168 parties, with important parties such as the US, Turkey, Venezuela, and others that have not yet ratified it yet. The Seabed Arms Control Treaty, similarly, only has 94 parties out of the 193 countries that have signed. These guidelines do not work if any one country chooses not to participate, as it grows more efficient with more parties in accord. Nonetheless, there are still disadvantages to this solution. For one, it is important to consider that there are countries who have not ratified these agreements yet, meaning that they may find various concerns, such as an unwillingness to allow the international community to dictate a nation's ability to control their territorial seas. However, it is vital that international cooperation is established and potential other mechanisms are employed to further enforce the safety and security of all nations on the ocean floor.

**Encourage international collaboration.** This can take form through data sharing, working together in mining or research projects, supporting technological development, etc. With countries working together, there is a greater assurance to help minimize the chances that any one nation will have greater leverage over another. For example, if one nation has mapped out a large part of the seas, it can be used as an advantage over others, both militarily and economically. This can pose great threats to both ends. Therefore, there should be constant strides towards a diplomatic solution before an arms race can be escalated.

**Establish a strong, central body to oversee sea operations.** Currently, the International Seabed Authority (ISA), which holds the majority of responsibilities on the seafloor, is in need of reform. Its most significant problems include the inadequate UN oversight it receives as well as the lacking prioritization of its work, having not yet established ocean mining regulations for the international community. In addition, there are possibilities that a new organization could be established to work with the ones already existent. This new agency could focus specifically on arms on the seabed, which has not been specifically addressed, though deserving to be so.

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