NHHS MODEL UN

TriMUN III 2025

Background Guide

General Assembly: Cleaning the Great Pacific Garbage Patch For A Brighter Future

Esteemed Delegates,

Welcome to TriMUN's General Assembly, hosted by North Hagerstown High School. In this committee, you will meet to discuss the emerging threat making waves in the Pacific. Our MUN team is excited to present this year's topic of the Great Pacific Garbage Patch! Get ready to discuss the ecological influence the plastic industry has on the health of Earth's oceans, rivers, and coastlines. Delegates who prioritize well-thought-out resolutions that provide insight into the perspectives of various stakeholders will be rewarded.

Hello, my name is Leah McCafferty, and I will be your co-chair for this committee! I am currently a freshman at the University of Maryland, College Park, and I am a proud alum of North Hagerstown High School's Model UN club. During my time with NHHS' MUN team, I absolutely loved how the club expanded my awareness about the world and gave me opportunities to speak with amazing people I never would have met otherwise. In the past few years, I have contributed to the coordination and execution of TriMUN, and I am very eager to be chairing it for the first time. I had amazing experiences with Model UN and I am hoping that, during this conference, you all do as well, as we discuss solutions regarding the Great Pacific Garbage Patch!

Hello, my name is Jennifer Ramm, and I will be your co-chair for this committee! I am currently a junior at North Hagerstown High School, and have been a part of the NHHS MUN team since my freshman year. In this time, I have participated in many conferences, from the Salem Witch Trials to fast fashion waste pollution. I have learned a great deal about myself, and the world around me. These past few years I have helped to organize the TriMUN training conference and, this year, the official TriMUN conference. The topic of the Great Pacific Garbage Patch is near and dear to me, as I first researched it in 7th grade and have been invested ever since. I look forward to seeing how your strategies and solutions play out in the duration of this conference!

Sincerely,
Leah McCafferty
Jennifer Ramm
TriMUN III Committee Co-Chairs

Introduction

In 1988, the National Oceanic and Atmospheric Administration (NOAA) predicted the accumulation of plastic waste and debris in the Pacific Ocean. In 1997, these predictions were proven true when Charles Moore, a racing boat captain, discovered a large section of the North Pacific Gyre cluttered with floating debris. This would later be dubbed the Eastern Garbage Patch which is one of the two major sections of the Great Pacific Garbage Patch (GPGP). The Western Garbage Patch is located off the coast of Japan while the EGP is located in the waters between Hawaii and Canada. Since its discovery, the GPGP has grown to approximately 1,600,000 km^2 (620,000 mi^2), though its precise size is indefinite (The Ocean Cleanup, n.d.).

The cause of this growing mass is a combination of mankind's growing production of plastic waste and the natural ocean currents which suck and trap floating debris into a vortex. According to the IUCN, over 460 million tons of plastic is produced a year. While only about 0.5% of the total plastic produced each year ends up in the ocean, its impact is stark. This works out to be around 2.41 million tonnes of plastic yearly (Lebreton et al., 2017). Much of this plastic ends up in landfills or in natural environments on land, however a portion of it makes its way into the ocean; plastic enters namely from polluted rivers, stormwater runoff, and discarded shipping or fishing equipment. Solar radiation further breaks down the plastics into micro-pastics (1nm - 5mm) and nano-plastics (<1nm). The sum of the plastic in the GPGP is estimated to be around 1.8 trillion pieces, weighing about 80,000 metric tons (Plastic Collective, 2023).

Once the plastic and debris are in the water ocean currents carry them further out to sea. The ocean currents are formed by prevailing winds that push ocean waters in continuous directions forming circular currents. The North Pacific Subtropical Convergence Zone (STCZ), near the islands of Hawaii, is a vital migration and feeding zone for millions of animals including birds, sea turtles, seals, whales, and countless other species. The GPGP passes through the STCZ on its way through the North Pacific Subtropical Gyre, which is defined by the South Pacific currents and the Arctic currents convergence rotating clockwise around the Pacific. Plastic debris traverses the area wreaking havoc to the marine ecosystems it encounters.

It is thus the committee's responsibility to address the growing issue by acknowledging its ecological impact on marine ecosystems and financial significance of the GPGP. Delegates must discuss the various aspects with a well written position paper which will be referenced for a nuanced debate. Appropriate formal communication and cooperation will be essential while forming blocs and drafting resolutions. Delegates will be expected to be on task during the committee session. The quality of the content and their ability to produce realistic solutions will heavily influence the award decisions.

TOPIC 1: Impact On Marine Life And Aquatic Ecosystems

As a common rule, animals all over the world have been found victims of excessive pollution, dying as a result of ingesting unnatural materials never meant to be consumed; aquatic life has been no exception. Within the oceans, garbage patches consisting of litter, fishing gear, and marine debris have collected in clear formations of large magnitudes. This is a result of the naturally occurring gyres that maintain the ability to pull trash to their centers--this is an especially pertinent issue in the Pacific ocean where two gyres are currently present. These formations are called garbage patches, with the largest being the "Great Pacific Garbage Patch" located in the North Pacific Gyre. The result of these garbage patches are immense, leading to issues such as entanglement and ghost fishing, ingestion of plastics, and the transport of non-native species.

Ghost fishing and entanglement suggests the death and injury of marine life due to the debris such as discarded fishing nets and certain pieces of looped debris. These discarded objects can result in unnecessary deaths as they continue to trap and entangle marine life even as they are no longer in use by a fisher (NOAA Marine Debris Program, 2013).

Furthermore, the ingestion of harmful materials has been an issue since the mid 20th century when plastic became widely accessible, marked with the deterioration of health for all forms of aquatic life. Many of the animals in the area, when eating these microplastics and debris, are unable to digest these foreign materials correctly. This inability to digest the trash allows the items to continually take place in their stomachs, stopping them from receiving nutrition sustenance from other sources of sustenance. The effects of this can lead to long-term health issues, and if they continue to persist, they may also result in death.

Finally, the garbage patches can impact aquatic life by transporting non-native species and displacing them as a result. Organisms such as algae, barnacles, crabs, and more have been transported as a result of these garbage patches, attaching them to the vast expenses of trash before being moved to areas many miles away (NOAA Marine Debris Program, 2013). This not only poses a threat to the health of the organisms displaced by the garbage patches, it can also impact the natural workings of an ecosystem if the organism displaced is invasive. The invasive species can become overly established in the new environment, outcompeting native species for vital resources, disrupting the ecosystem as a whole.

Aquatic ecosystems are thrown in disarray as the marine life, easily susceptible to these issues, die as a result. Their deaths cause the disruption of food webs, blocking sunlight for algae and plankton, key producers in the marine food chain. As these organisms are threatened, food webs risk destruction and extinction. Without the presence of plankton and algae, there is a detrimental food shortage for lower levels of marine life, eventually resulting in food shortages for all levels of the aquatic food chain (National Geographic, 2024). Moreover, the disruption of the food

chain can result in further disruption of the ecosystem as it will allow certain invasive species to remain unchecked while killing off species necessary to the wellbeing of other levels of marine life.

TOPIC 2: Ramifications On The Blue Economy And Fisheries

The result of the Great Pacific Garbage patch on aquatic life impacts the lives of humans as well, from consumption to various economic sectors. The blue economy, the idea of creating an economy rooted in sustainable activities regarding oceans, seas, and coastal regions, is one of the many ways continued destruction of marine ecosystems can impact humans. Furthermore, the ocean economy is more than just the consumption of seafood, it involves many intricate processes such as the use of offshore oil and gas, marine equipment and construction, cruise tourism, marine energy, and more. Ocean based activities have grown exponentially within the last 50 years, now worth an estimated US$1.5 trillion (McBain, 2023). However, this growing system faces risks with the continued persistence and growth of garbage patches--the principles of the Blue Economy seek to rectify the issues that have allowed for this growth in the first place.

Many nations rely on their coasts to power their ways of life from tourism dollars to large scale fishing. The increase of marine debris washing up onshores directly harms these economies. In an Alabama, US, community, the NOAA found that doubling the amount of marine debris caused the loss of 2,200 jobs which translated to approximately a loss of $113 million tourism dollars (Mccoy, 2021). The decreased revenue in coastal areas can be detrimental. While the United States may have more specific data, this phenomenon is not localized.

Moving off the coast and into the water, marine debris has been proven to harm fishers while fishers also increase marine debris. Plastic and other materials can degrade sensitive ocean habitats which result in the decreased ability for marine life to survive. Additionally, lost fishing gear continues to trap and kill target species while simultaneously creating safety and navigation hazards. The lost or unused gear that has not been properly disposed of and instead remains in the water wreaking havoc is known as the process of ghost fishing. In western Mexico, ghost fishing is a prominent issue which has contributed to the deaths and near extinction of the vaquita porpoise. The loss of fish and crustaceans induce lost catch opportunities, further contributing to the weakening of the blue economy.

For small island nations, ghost fishing, marine animals killed by abandoned, lost or discarded fishing gear, threatens their food security and economy by attacking their main source of income. The south Pacific island of Vanuatu reported that over half of their revenue, which came from frozen fish exports, were in danger from marine pollution from ghost fishing (Giskes, 2024). Larger nations such as the United States, Japan, Italy, Australia, and South Korea contain large

amounts of abandoned gear with high numbers of marine entanglement. These major contributors have not been held accountable for their actions.

The same fish, that are consuming microplastics off shore, make their way into human stomachs. Estimates for how much plastic remains in fish after they are caught, cleaned, and cooked vary greatly, but one thing is clear. The trash humans put into the ocean comes back. The GPGP is the largest accumulation of plastic that is accessible for fish to consume. Coastal areas with high human population and inadequate waste management, particularly around East Asia, show high rates of plastic ingestion by fish. Plastic exposure to the body is linked to various health problems including an increased risk of cancer, heart disease, reproductive issues, and hormone disruption. This is an issue which requires immediate attention from the UN and individual national legislation.

Global Action

The United Nations as a whole has been slow to address the exponentially growing issue. However, many individual nations and organizations have put forth their efforts resulting in measurable action. The most well known of these groups is the Ocean Cleanup whose progress in eliminating plastic pollution has made a clear and measurable impact. Its headquarters are located in Rotterdam, Netherlands and have various locations in partnering nations such as Indonesia, Thailand, Malaysia, Vietnam, and the United States. One of their main goals is to focus on cleaning rivers to prevent plastic pollution through “developing and scaling technologies to intercept plastic” (The Ocean Cleanup, 2018). In September 2022, the United Nations granted the Ocean Cleanup consultative status, which enables it to contribute to Multilateral Environmental Agreements.

In late 2022, negotiation for a UN Plastic Pollution Treaty began which aimed to address many of the issues prevalent in the creation of the GPGP. The treaty is still in development, but it could mean participating countries would be legally obligated to take action to prevent plastic pollution. It would potentially work similar to the existing Paris Agreement which aims to limit global warming by reducing greenhouse gas emissions.

Individual county efforts have sparked international hope. As early as the 2000s, nations have begun placing restrictions on plastic bag usage. Kenya is often cited as having the strictest plastic bag ban due to its comprehensive prohibition of single-use plastic bags. Members of the EU have enacted their own bans on plastic bags as well as other plastic pollution prevention tactics like through the return of plastic bottles. Public awareness, public action, and corporation cooperation are needed to fuel the fight against plastic in Earth’s oceans.

Bloc Positions

Bloc 1: Nations Responsible For Major Plastic Pollution

This bloc includes large industrial nations who produce and consume large amounts of plastic waste. These polluters may also have fishing industries that are responsible for high rates of ghost fishing. These contributors will be geographically close to the GPGP whose identifiable trash can be traced back to that nation. Countries with poor waste management systems contribute to the total volume of plastic entering from land-based riverine sources.

Examples: Japan, China, South Korea, United States, Indonesia

Bloc 2: Nations Largely Impacted By GPGP And Ocean Pollution

The nations in this bloc suffer from plastic pollution washing up onto their shores and collecting in the surrounding area. These include countries who rely heavily on their coasts through fishing as a trade export, tourism, or coastal communities. Experiencing high levels of pollution, both their citizens and economies are at risk. Delegates will be expected to address the issues that plague their water fronts.

Examples: Philippines, Malaysia, Thailand

Bloc 3: Nations Advocating For Plastic Reduction

While these nations may not be a large part of the problem, they will be part of the solution. These states may partner with global and local NGOs that work to intercept waste before it hits the seas or work to clean beaches. Partners of the Ocean Cleanup and other states working to address plastic pollution will be vital when consulting for resolution papers. Delegates are encouraged to expand existing positive actions.

Examples: Netherlands, Rwanda, Canada

Questions A Resolution Must Answer:

1. How is the UN addressing plastic production as it relates to ocean pollution?
2. What states are being held responsible for their contribution to the GPGP?
3. How should nations with varying levels of plastic pollution be treated accordingly?
4. Will aid be given to struggling nations who suffer from the impact of large polluters?
5. What roles do NGOs play in cleaning existing waters and coasts?

Conclusion

From the severe impact on marine life to the money lost in the blue economy, plastic ocean pollution as a rising pervasive issue requires immediate attention. Nations must address ghost fishing to protect from the trapping and entanglement of marine animals leading to injury or death. Tackling the GPGP has presented challenges in the past from the crossing of borders and its location in international waters. Solutions will require research, creativity, and quick thinking. Good luck to all delegates and we look forward to seeing everyone.

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