

**United Nations Environmental Programme**

TOPIC:Coral Reef Conservation and Restoration


# SOCOMUN XXVI

United Nations Environmental Programme

Coral Reef Conservation and Restoration

Hi, my name is Nicole and I will be your chair for SOCOMUN this year!! I am currently a junior at Santa Margarita and this is my third year in Model UN. The MUN program at SMCHS is one of the main reasons I came to SM for high school. MUN has helped me to become a more powerful public speaker and has taught me about many challenges we face as an international community. MUN has also strengthened my debating and team working skills. In caucus, you must compromise with other delegates and sometimes you don’t get your way, learning how to be a leader in these situations is a priceless skill. My personal favorite topics to debate at conferences include nuclear energy and nuclear waste, science and technology and cyberterrorism in committees like IAEA and Interpol. Through MUN I have had the opportunity to travel to Georgetown and will be going to London next month for another conference. Other than MUN at SM, I am a member of ASB, I’m president of two clubs, and was on the basketball team for two years.

 I hope SOCOMUN is a wonderful experience for you all and you learn something new! Read the Topic Synopsis and be prepared for educated sessions of debate. If you have any question please don’t hesitate to email me at socomununep@gmail.com. I look forward to meeting all of you in committee, good luck!

Hey, my name is Laurence Habbouch. I am currently a senior attending Santa Margarita Catholic High School. I will be the legal for this conference. MUN has been a great experience for me and I have learned so many valuable skills. I wish all the best of luck at this year’s SOCOMUN conference and I hope you continue with MUN for the rest of your high school career!

Hello, I am Shuyi Niu and I will be the secretary in your committee at SOCOMUN this year! I am a junior at SMCHS, and this is my second year involved in MUN. MUN is where we learn diplomacy, international relations, and present solutions to current global problems. I really enjoyed MUN and I found my happiness and strength through public speaking and working out resolutions in a group. In addition, I am also passionate about singing, playing guitar and swimming. Hoping forward to see you in the conference!

**Background:**

Coral reefs comprise only 0.2% of the world’s ocean regions, but they are home to 30% of all marine life and are one of the most diverse ecosystems on the planet. Coral reefs not only house marine life but protect humans by acting as a natural breakwater from typhoons, tall waves and other natural events. Currently, 10% of all coral reefs are so damaged that they are beyond recovery. 30% are in critical condition, the equivalent of being endangered and experts have determined that if the same threats to coral reefs continue, 15% will be dead in the next decade and 60% of the world’s coral reefs will be dead by 2050. A study in nearly 100 Caribbean locations found that since 1970, the coral reefs in the Caribbean have declined by 50%. The threats to coral reefs are both natural and human causes. Natural causes include hurricanes and diseases, however if the coral reefs are healthy to begin with, recovering from a natural disaster is not difficult. Yet manmade pollution makes the reproduction of coral reefs very difficult and poses a detrimental threat.

The largest threats the coral reefs face include global climate change, unsustainable fishing, and pollution. Climate change is by far the greatest threat to coral reefs. Rising ocean temperatures due to greenhouse gasses and human activities causes coral bleaching and outbreaks of different infectious diseases. In 2016, Japan’s Environment Ministry released a report that stated coral bleaching effected 90% of its largest coral reef, the Sekisei Lagoon. Now over 70% of it is dead. In addition, more carbon dioxide is being absorbed into the ocean from the atmosphere and this reduces calcification rates and decreases the pH in coral reef environments. Climate change also affects sea levels, the intensity of tropical storms and ocean circulation patters which all disturb coral reef ecosystems. Unsustainable fishing leads to the loss of different species that live in coral reefs. The loss of a whole species effects the coral reef ecosystem but also small local economies that rely on the ocean as a source of food and income. It is estimated that 275 million people depend directly on coral reefs for their livelihood. These people are mainly located on small islands in the Caribbean region. Many types of commercial fishing impose irreversible physical damage to the reefs and other marine ecosystems. Land-based pollution includes costal development, deforestation, agricultural runoff, and chemical and oil spills. While all these environmental crises are detrimental to their own ecosystems in different ways, they all effect the coral reef ecosystem too. These man-made sources of pollution stunt coral growth and reproduction, interrupt ecological functions and spread diseases to species living in coral reefs. The effects of pollution on the coral reef ecosystems can be clearly seen in the U.S. islands in the Pacific and the Caribbean. Scientists have found that there have been significant changes in drainage basins because of agriculture, deforestation, over grazing, urbanization and fires. The increase of land-pollution in this area has led to the coral reefs adjacent to the mainland to greatly diminish.

 All these threats and factors have led to the loss of two significant grazer species in the coral reef ecosystem, the parrotfish and sea urchin. Grazers are necessary fish that live in coral reef ecosystems that eat away algae that suffocates coral. In 1983, an unknown disease caused mass deaths of sea urchins and overfishing has caused parrotfish to reach the brink of extinction in the 20th century. The species could have repopulated after these incidents, but with each year, circumstances in coral reefs worsen and there is chance for the repopulation of these species. Finding a way to repopulate these two species in the coral reef ecosystems can help the reefs recover and regrow.

There are many different ongoing projects to rebuild the coral reef ecosystem from repopulating species to anthropogenic interventions. Anthropogenic interventions are recreations of coral reef environments that are as close to the natural settings as possible. It involves decoding the whole-genome sequence of different coral which then is used in an analysis to construct the recreation. This method, although new, has been successful on the small scale and can be further utilized.

 The UNEP has a Coral Reef Unit that specifically works to restore the coral reefs to their former capacity. It was established in 2000 and works with programs such as the Regional Seas and other NGOs. There are many international agreements in place to protect the world’s coral reefs including the Convention on Biological Diversity (CBD). The Convention on Biological Diversity sets different goals and commitments to maintain the coral reefs using genetic resources and was adopted in 1995. The CBD includes a Strategic plan for Biodiversity adopted in 2010 that “provides an overarching framework on biodiversity for the entire United Nations system, aims to reduce pressures on biodiversity, restore ecosystems, and promote the sustainable use and equitable sharing of biological resources”. The UNEP has also adopted the Ramsar Convention on Wetlands which calls signatory countries to “maintain the ecological character of their Wetlands” and also defines coral reefs as a marine wetland. In addition to these different multilateral conventions, the UNEP has also hosted Sustainable Development Summits. The Rio+20 Earth Summit 2012 recognizes that “oceans, seas, and coastal areas form an integrated and essential component of the Earth’s ecosystem” and also emphasizes the importance of sustainable development in coral reef environments. Lastly, the World Summit on Sustainable Development 2002 adopted the Johannesburg Declaration. The Johannesburg Declaration commits nations to sustainable development and the maintenance of their coral reefs.

**Possible Solutions:**

While the following are possible and fully probably solutions to restore coral reefs, it is important to research and create your own solutions so that you can form resolutions with other delegates in committee. While most countries do not have differing opinions on coral reef restoration, make sure any solutions you are proposing do not conflict with your country policy. Additionally, money and funding will not be in issue in our committee, as budgets are addressed in the Fifth Committee and the World Bank.

To combat the degradation of coral reefs, the use of coral reef nurseries should be expanded to an international level. Coral reef nurseries save fragmented pieces of coral and allow them to regrow in an artificial environment until they are strong enough to be placed in the ocean. If an international nursery is created instead of many small, private nurseries, the impact of these nurseries would greaten.

Oil spills are major cause of marine life devastation. Rerouting ships carrying oil around major coral reefs to reduce the risk of immediate oil contamination could save the ecosystem from being tarnished immediately. In addition, finding ways to transfer oil other than the ocean will completely get rid the risk of an oil spill.

The coral reefs are not the only marine life suffering, with the death of the coral reefs, many specifies are losing their habitats. Finding a way to preserve pertinent species that help the coral reef ecosystem function is vital. Current methods being employed is breeding different endangered species of fish or improving small areas of reefs at a time to increase the population of these animals.

**Questions to consider**

1. How has your country been effected by the loss of coral ecosystems? Has your country aided in the fight to restore coral reefs or has your country been a factor in the death of the coral reefs?
2. What are some multinational ways to solve this issue, what has worked in the past and what hasn’t?
3. How has your country worked with the international community to combat the destruction of coral reefs?
4. Are there any bodies or organization, such as regional, national, or international non-governmental organizations (NGOs) that would be helpful to maintain coral reefs?
5. Does your country currently employ methods such as repopulating species or nurseries to rebuild the coral reefs?
6. How can private corporations be encouraged to become eco-friendlier and reduce their greenhouse gas emissions and pollution?

Works Cited

1. Shinzato, Chuya. "Global Climate Change vs. Coral Reefs." Nikkei Asian Review, 01 Apr. 2017. Web. 02 Apr. 2017.

In the article of *Global climate change vs. coral reefs*, Chuya Shinzato reviewed the fact that the coral reef ecosystems have been affected by the global-scale climate change. Because coral reefs are the homes of almost 30% of all marine life, the extinction of coral reefs will ultimately cause the biodiversity being lost since the marine organisms lost their habitats. Furthermore, to protect the coral reefs from coral bleaching, Chuya also reviewed the genomics-based approach offered by Japanese, Israeli scientists to reef restoration. He also compares and contrasted the effects of this anthropogenic intervention using genome sequence data and other resolutions such as planting coral fragments.

In this article, it reveals the crucial fact of the endangered coral reefs due to global warming and its impact on the ecology. It also offers the resolutions on this topic, giving some useful data and specific examples and details. By contrasting those examples, it shows current resources to the reader to help them better understand the urgent need of further discussion on this topic.

1. US Department of Commerce, National Oceanic and Atmospheric Administration. "NOAA's Ocean Service's Education Professional Development: Coral Reef Conservation." Professional Development - Coral Reef Conservation: NOAA's National Ocean Service Education. N.p., 19 Dec. 2005. Web. 02 Apr. 2017.

On this site, it summarizes the main causes due to human activities, natural threats and changes, and human benefits from coral reefs and protection monitoring that is currently provided by UN or NGOs. It also shows the data of the amount of endangered or sick corals on the earth and the general trend of coral population in the near future.

This report emphasizes the increasing risk of coral extinction caused by pollution and overfishing and etc. It brings attention of people in order to realize the importance of this topic and gives more resources about threats, resolutions and benefits of coral conservation.

1. Ming, Chou Loke. "Southeast Asia' Coral Reef Biodiversity." Cover Story 10.1 (2011): 36-39. EBSCOhost. Innovation. Web.

In Southeast Asia, there are abundant coral reefs, makes Southeast Asia being in the center of coral reef biodiversity which also provides individuals with essential goods and services. However, the restoration is extremely important at this point because there are still a lot of people believe that the coral reefs can recover from illness naturally; it can help reefs hasten the pace of recovery and to restore the sustainable use of coral reefs.

This reports helps people to understand the true value of coral reefs by estimating the benefit of economy, benefit for society and benefit for ecology and by emphasizing the importance of restoration by logical reasoning and possible resolutions that could effectively help the issue.

1. "Coral Reef Unit." *Global Policy*. N.P., n.d. Web. Apr. 2017.

This article talks about the works of the UNEP and specifically the Coral Reef Unit within the UNEP. The Coral Reef Unit is responsible for many multilateral and international treaties about the protection of the coral reefs and has coordinated many summits to pass resolutions and treaties. In addition, Member States of the Coral Reef Unit are committed to help the environment and sustain coral reefs.

1. C.B. "Rescuing the REEFS!" Discover Magazine. Kalmbach Publishing CO., July 2008. Web. 2 Apr. 2017.

This article calls people to protect the environment by taking actions to protect endangered coral reefs. There are several points and examples that each person could make, such as eating low on food chain, use organic fertilizers and plant frees. It reports the ways that the public could take on helping conservation of coral reefs and suggests taking responsibility for conservation.

 Many people ignore issues like coral reef extinction because they think that they cannot be helpful any way especially without the other people’s encouragements. However, this article brings people to be involved instead of just telling the theory and general information.

1. "Conservation Reef Restoration." Nature Research Highlights. Restoration Ecology, 2009. Web.

 This is an article writing about research focuses on a method to help marine sponges reattach themselves to reefs. It states the reasons why the large marine sponges that are dislodged from reefs, such as fishing lines, ship groundings, or storms have little chance of reattaching to a reef naturally. It mentions a finding that the sponges secured to a reef's limestone bed helped transplanted sponges reattach successfully to the reef found by researchers Steven McMurray and Joseph Pawlik.

 In this article, it brings another important fact about dislodged sponges from the coral reefs. It provides us one more way to think and to find a good resolution for coral reef in order to improve our living conditions.

1. "Coral Tree Nursery | Coral Restoration Foundation." *Coral Restoration Foundation*. N.P., 2016. Web. 07 Apr. 2017.

This source is all about a non-profit organization that helps to repair and conserve existing coral reefs as well as create new ones. It goes a bit more in depth talking about what this organization does specifically, and the process used to plant new coral reefs. I believe that this is a strong source that can be used to provide an example of an NGO. It also provides examples of what NGOs and other organizations can do in terms of coral reef conservation. I found the part where it talked about the use of nurseries to grow coral reefs to be especially interesting. I also thought that it was nice to see a creative solution to the issue where is talked about the use of trees to prevent storm generated surge waves.

1. "50 Reefs." *The Ocean Agency*. N.P., 2016. Web. 07 Apr. 2017.

This source is great for showing what a realistic and creative long term solution would be like to see. This source goes in depth talking about several projects occurring globally to conserve reefs, and provides insight into how countries collaborate on this issue. This source can provide insight into the idea of global cooperation and supports the idea that new reefs can be created. It also provides several non-profit organizations as well as an organization that collaborate to achieve goals in coral reef conservation. I found this to be very interesting in general, but more specifically regarding the idea of the “reef response” section. I felt this way, because it talked about the response to the impact of bleaching on coral reefs when it was publicized in newspapers, and I thought that was interesting.

1. "Coral." *Ocean Conservancy*. N.P., 2017. Web. 07 Apr. 2017.

This source was not focused on the solutions to the issue of coral reef conservation at all. However, it is important to understand exactly what the issue is for it to be addressed, and this source gives information on what coral reefs are. This source provides statistics about coral reefs, proving their importance in everyday life. I believe that this source is also instrumental because it shows why people need coral reefs, and why people should care about this issue.

1. Aldred, Jessica. "Caribbean Coral Reefs 'will Be Lost within 20 Years' without Protection." *The Guardian*. Guardian News and Media, 02 July 2014. Web. 07 Apr. 2017.

This was a news article from the guardian. I thought that it was very interesting to know the importance of the issue, as coral reefs may disappear within two decades. This also helps to gauge the quality of solutions as long term solutions should not go past twenty years, because that is simply unrealistic. I find that it is important to have background knowledge, and this source provides background knowledge as well as the urgency of the issue. It also talks about natural causes and unnatural causes of coral reef destruction, which is why I value it.