



MODEL UNITED NATIONS

SOCOMUN XXVIII

UNITED NATIONS ENVIRONMENTAL
PROGRAMME

TOPIC: CORAL REEF CONSERVATION AND RESTORATION



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UN Environmental Programme Coral Reef Conservation and Restoration

Introductions

Hey y'all! My name is Brendan Reeves and I am going to be your Chair for the UNEP. I am a senior at SMCHS, and this is my fourth year involved with the Model United Nations program. During my time in MUN, I have had the opportunity to travel to UCSB, Montreal, as well as a recent trip to London for the Royal Russel MUN conference. Not only have I had many incredible travel experiences in MUN, but I have also gained invaluable speaking skills. In addition, it has allowed me to hear multiple new perspectives on world issues that challenge international leaders today. I also care deeply about the environment and hope that many of you do as well and can bring your passion to our committee. If you require any assistance in the preparation process, feel free to contact me at socomununep@gmail.com.

I sincerely hope that you enjoy and benefit from our conference. I look forward to meeting you all!

Hello! My name is Max Musto and I will be your Vice Chair this year at SOCOMUN. I really enjoy MUN and hope that I can help in making this conference an enjoyable experience for you. Throughout my years as MUN, I have always wanted to actually serve on a bureau, and I am excited for this great opportunity. I can't wait to meet all of you in person!

Hello, my name is Ryka Vahidi and I will be serving on the bureau. I have been in MUN for 1 year, and it is already one of my favorite classes. My experience with MUN has been a blast, and I love attending conferences where I try to win an award. I would highly recommend MUN to incoming freshman because of the unforgettable experience I have had with it so far, and I plan to stay in the class for the rest of my high school years.

Background

Climate change is perhaps the most important issue that the global community is going to be forced to face in the coming decades. Climate change is unique among global issues as, for the most part, its effects are not an immediate threat. Rather, the most disastrous casualties of climate change will be affected in twenty to thirty years if not even further in the future. There is of course one very distinct exception to this general trend: coral reefs. Overall, Earth is a very hardy planet, and has had to endure many cataclysmic events over the millennia. Coral reefs are much different, however, as even mild fluctuations can have very deleterious effects on not only the coral but the entire ecosystem. In the case of coral reefs, the temperature changes that have gone unnoticed by many average citizens of the world are a major threat. With increased temperature, increased levels in ocean acidification have also been known to play a major role in coral bleaching events across the globe. Climate change is an especially daunting challenge to face as there is no clear solution to the problem that the international community can agree on. This means that even nations with excellent regulations concerning emission of



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hydrofluorocarbons and other greenhouse gases will still suffer from fluctuations in carbon dioxide. This means that countries that have coral reefs and rely on them in a number of ways are essentially helpless to suffer the consequences of global indifference if action is not taken swiftly. There is a massive consensus in the scientific community that this action cannot take place soon enough. Just as an example, Dr. Julia Baum of Canada's University of Victoria postulates that 90% of all coral reefs in the world will be completely destroyed and dead by the year 2050. Keep in mind that even today, 27% of all coral reefs have been killed. That is why it is more pressing than ever to rectify the errors of the past and save what remains of our coral reefs.

It is important to note that climate change is not the only obstacle that environmentalist face in protecting coral reefs. In addition to climate change, the global community also must deal with the threats of invasive species, increased levels of pollution, overfishing, unsustainable fishing practices, and dangerous levels of acidity in the ocean. All of these unsustainable obstacles are serious threats to the entire biosphere, not just coral. Among all wildlife in the ocean that receive vital necessities like food, shelter, and sustenance, roughly 25% of those requirements are met from the globe's coral reefs.¹ Therefore, there is a serious risk that massive numbers of species will be lost if coral reefs become unsustainable, which is already happening to an extent.

It is also important to note that the growing number of coral bleaching events is not only a threat to species and wildlife in the environment, there is a serious economic cost to consider. It is estimated by the Global Coral Reef Monitoring Network that over five hundred million people rely on coral reefs in some way for their personal being and livelihoods. In developed nations such as Australia, many natives count on the coral reefs to collect revenue from tourism that is generated by the aesthetically stunning ecological phenomenon. Tourism is not, however, the only economic activity that is generated by coral reefs. For many citizens of the world, especially in the developing world, rely on coral reefs for their food security and basic income. This does not even mention the coastal protection that those nations with coral reefs receive on their coastlines from the abundance of coral in their surrounding waters.

One specific threat that I will cover in more detail is unsustainable fishing practices. This is because not only is this specific problem completely preventable, but it is also one of the simplest problems to solve from an environmental standpoint. According to the Reef Resilience Network (RRN), unsustainable fishing practices are the most detrimental of all local effects concerning coral reefs. The main issue occurs when local fisherman attempts to catch fish either for their own consumption or outside sale using incorrect equipment and vessels. These mal-fashioned boats have a tendency to scratch the coral floor which permanently damages the reefs. This becomes even more alarming when one considers the fact that the National Oceanic and Atmospheric Administration reports that it can take up to ten thousand years for coral polyps to grow and form a group of larvae. In addition to just how detrimental overfishing can be, it also extremely widespread. For example, there are several coral reefs surrounding Southeast Asia and the South China Sea. In these oceans, close to 95% of coral reefs are negatively affected by overfishing and other malpractice on the part of indifferent fisherman. One of the most horrifying fishing malpractices that is unfortunately common in Southeast Asia is a practice known as dynamite fishing. Dynamite fishing is the comically horrific practice of using actual

¹ http://wwf.panda.org/about_our_earth/blue_planet/coasts/coral_reefs/



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TNT to kill or stun fish. Oftentimes, this practice is carried out in areas that have shallow coral reefs that are highly vulnerable to this practice. This highly destructive method not only destroys coral but also shatters coral tissue that prevents coral from re-growing in areas where this practice occurs. While it is, for the most part, completely illegal, many governments lack the political will to take steps to prevent it. This is a common theme with climate change in general that you should keep in mind – the fact that governments are often unwilling to take even small and common-sense steps to help the environment.

Another important way that coral reefs are in danger is through the growing threat of ocean acidification. Remember that ocean acidification is directly related to the global fluctuations in temperature known as climate change. Since coral polyps depend on steady temperatures in our oceans as well as a constant supply of calcium to build up their “skeletons,” even small fluctuations in pH levels in the ocean will cause a cessation of polyp growth as well as initiate cell death. This is because when PH levels are too low (meaning more acidic), it inhibits the corals ability to calcify. After an extensive meta-analysis of polyp gestation levels, the National Academy of Sciences (PNAS) estimated that 52% to 73% of new larval settlements on coral reefs were killed before they even have a change to calcify and grow. As important as defending existing coral reefs is, the global environmental community should also focus on growth in the future. If future generations of life are to enjoy the benefits of coral reefs, the threat of ocean acidification must be dealt with.

I will now take a brief moment to discuss the actions that have been taken by the United Nations in the past that revolve around this specific issue of coral reef conservation and restoration. However, in our actual committee, extensive discussion related to United Nations action is highly frowned upon. Instead, the discussion should be focused on the action that has yet to and should be taken. First of all, the most active NGO that currently deals with coral reef conservation and restoration is the World Wide Fund for Nature (WWF). Just one small example of their actions is their partnership with coastal communities that rely on coral reefs for sustenance and working together to make the fishing and tourism practices more sustainable. The major UN conferences related to coral reefs have been the Earth Summit, the Convention on Biological Diversity (CBD), the World Summit on Sustainable Development (better known as the Johannesburg Declaration), and finally the Rio+20 Earth Summit in 2012. Unfortunately, for the most part these summits have not culminated in any drastic actions taken by the international community to defend coral reefs and ensure their conservation and protection.

Possible Solutions

Keep in mind that the solutions that I am sharing with you are purposefully general in nature. These solutions should not be used in this exact format in actual committee. Instead, please try to utilize these solutions to act as a mental catalyst for your own unique ideas. Another important piece of information to keep in mind when you are writing solutions is to stay true to your country policy. Not every country in the world is as keen on stopping serious threats like overfishing for example and the debate should reflect that. Also remember to be cautious about how governments would respond to requests to hand over rights of their special economic zones. For example, Australia would most likely be completely unwilling to hand over it's coral reefs to the United Nations to 'protect.' Another very important piece of information you must remember



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is that ‘funding’ is an invalid topic of discussion at our conference. The chairs will intervene if such topics are brought up. For the sake of fluid debate and more optimistic and varied solutions, it is assumed that both the United Nations and governments will fund any solutions that you may come up with.

One last piece of information to keep in mind is that the use of ‘education’ as a solution will be highly frowned upon in this particular committee. Although this solution is a favorite of many in MUN, it is highly simplistic and doesn’t allow for any kind of stimulating debate. Education is a fine idea in many cases but in this conference, we will not entertain such solutions. Please be warned that mentioning education in the UNEP will negatively affect you.

With all of that in mind, here are some concrete solutions to help you brainstorm.

One solution that has already been implemented somewhat successfully on a small scale is the ‘coral nursery.’ The idea behind coral nurseries is that ocean acidification is often so severe that coral polyps are unable to grow normally. Therefore, governments (but mostly NGO’s) have taken on efforts to grow their own coral using their own algae and larvae. This not only ensures that the species of coral itself will not go extinct but also it can be transported later. It’s important to keep in mind that coral is extremely fragile, and this is especially true in the organism’s infancy. In other words, coral is most susceptible to bleaching and death when it is still attempting to garner enough nutrients from photosynthesis and the surrounding environment to calcify. That is why many propose the idea of building a safe habitat artificially to grow these precious creatures. The structure of these facilities is not especially complicated either. The main design entails the use of PVC pipe that is organized in the shape of tree. After the structures are set up, divers are able to go the depths and plant the coral polyps where they can now grow with a protective structure around them. The corals will usually stay in the nursery until they are strong enough to support themselves and then they are able to be released into areas that are in need of fresh coral to support the ecosystem. Although this solution is simplistic, it has been proven to be effective.

Another viable approach to tackle the very pressing global goal of coral reef conservation and restoration is through more effective regulation. Tough regulation could include sanctions as well as economic restrictions on fisheries that utilize unsustainable fishing practices. Another approach could be to use economics as an incentive for companies that comply with the global good in their maritime activities.

Another practical solution is the banning of the chemical oxybenzone, a chemical that is commonly found in sunscreen. According to the U.S. National Park Service, somewhere between 4,000 and 6,000 tons of sunscreen enters coral reef ecosystems around the world every single year. These chemicals interfere with the functions of coral polyps in extremely negative ways. Even taking steps to make sure that beachgoers on beaches near coral reefs could go a long way in preventing damage.

Questions to Consider:



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Please be aware that you are NOT supposed to literally answer these questions in committee. Rather, these questions are designed to allow you to expand your mind and critically ponder the topic in a way that will foster the gestations of your own creative solutions.

1. What action has your country taken in the past (specifically) to fight climate change and/or defend coral reef ecosystems?
2. What actions can your country or the UNEP take to encourage other nations to take action on climate change if the political will in the country does not allow such actions currently?
3. Even if it is simplistic, what realistic and common-sense solutions could be implemented immediately to ensure the longevity of coral reef ecosystems?
4. What policies can be implemented to lessen the severity of coral bleaching events that are currently taking place?
5. What type of regulations and/or sanctions would be most effective to ensure that coral reef ecosystems are protected?



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Works Cited

Shinzato, Chuya. "Global Climate Change vs. Coral Reefs." *Nikkei Asian Review*, 01 Apr. 2017. Web. 02 Apr. 2017. (<http://asia.nikkei.com/Tech-Science/Science/Global-climate-change-vs.-coral-reefs?page=2>)

This particular climate researcher is making the claim that the solution to coral reef problems could be genetics based. This Japanese-Israeli investigation could be the missing link in the international community's current approach to this issue.

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

(<http://web.a.ebscohost.com/ehost/results?sid=68bec3d7-0879-4a54-938a-6f3233af1d4d%40sessionmgr4008&vid=0&hid=4112&bquery=Coral+Reef+Conservation+and+Restoration&bdata=JmRiPWtoaCZkYj1sZmgmZGI9c2NoJmRiPWVyaWMmZGI9dHRoJmRiPW5maCZkYj1oeGmY2xpMD1GVVCZjbHYwPVkmdHlwZT0wJnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d>)

This report is written by the professor Chou Loke Ming, a marine biologist who has been studying the adverse effects of climate change. His report focusses on those who live directly around coral reefs and depend on them. This could help with economics-based solutions.

Becatoros, Elena. "More than 90 Percent of World's Coral Reefs Will Die by 2050." *The Independent, Independent Digital News and Media*, 13 Mar. 2017, www.independent.co.uk/environment/environment-90-percent-coral-reefs-die-2050-climate-change-bleaching-pollution-a7626911.html.

This is merely an article published in the UK that discusses some of the most horrific and extreme climate models in the coming decades. Hopefully, these will not come to fruition, but being aware of such possible threats should add a sense of purpose and urgency to your research.

Crcp. "NOAA's Coral Reef Conservation Program (CRCP) - Who We Are." *NOAA Coral Reef Conservation Program (CRCP) Home Page*, 19 Apr. 2016, coralreef.noaa.gov/about/welcome.html.

Since coral reefs are one of the world's most valued ecosystems, the NOAA's program to protect these reefs is very important. They focus on 4 main pillars of work including increasing resilience to climate change, reducing land-based sources of pollution, improving fisheries' sustainability, and restoring viable coral populations.

US Department of Commerce, and National Oceanic and Atmospheric Administration. "Restoring Coral Reefs." *Ocean Today*, 5 July 2011, oceanoday.noaa.gov/restoringcoralreefs/.



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This video talks about one method of restoring coral reefs – reattaching broken coral pieces. Scuba divers are sent to reattach coral using cement or epoxy putty. This allows the coral to be given a second chance to survive. Although it hasn't been truly tested on a large scale, it is worth considering.

Chad. "Introduction to Coral Restoration." New Heaven Reef Conservation Program, newheavenreefconservation.org/learning-resources/explore-topics/reef-restoration-methods.

This website discusses coral reef restoration methods including altering growing conditions, increasing structure available for coral growth, and by increasing coral coverage. This specific conservation program has actually had some relative success in some other areas of helping the climate as well. You should consider checking out their website for some other good solution ideas.

"Coral Reef Conservation and Restoration." Coastal Ecosystem-Based Adaptation, 29 Jan. 2016, web.unep.org/coastal-eba/content/coral-reef-conservation-and-restoration.

This website gives background on coral reefs and the benefits they bring to biodiversity, medicine, and tourism. It also lays out key issues facing coral reefs including anthropogenic pressures, climate change, and others. Finally, the website says the benefits of restoration and its cost effectiveness.

"Global Coral Reef Partnership - United Nations Partnerships for SDGs Platform." United Nations, United Nations, sustainabledevelopment.un.org/partnership/?p=7450.

This website discusses UN involvement through SDG #14 by listing implementation methods, achievements through the SDG, challenges, and updates on the goal. This website is good to build the base of a UN Involvement paragraph

"Coral Reefs." National Fish and Wildlife Foundation, NFWF, www.nfwf.org/coralreef/Pages/home.aspx.

Coral Reefs are one of the world's most valuable ecosystems, but recent reports indicate that 58 to 70 percent of coral reefs are directly threatened by human activity. Since 2000, NFWF has responded to the alarming decline in both the quantity and productivity of the world's coral reef ecosystems through multiple coral conservation initiatives that aim to improve management, increase public awareness, and reduce threats to coral reefs both domestically and internationally. Since Coral Reefs are in decline, the NFWF has come up with key strategies to help conservation efforts. The NFWF is doing a great work in helping to save one of the world's most valuable ecosystems, and more groups like this need to help in this effort because coral reefs are extremely important to the world's biodiversity.



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Coral Guardian. “Coral Reef Conservation.” Coral Guardian, Coral Guardian,
www.coralguardian.org/en/coral-reef-conservation/.

This coral reef conservation program helps develop the biodiversity of marine ecosystems in Indonesia, protecting and repopulating damaged reef areas through coral reefs conservation programs such as coral reef restoration projects. They also create artificial reefs to help improve the lost biodiversity in this environment. The project is organized in three phases. First preliminary study that evaluates the state of the area determines the positioning of the area of rehabilitation and its environmental impact. Then comes the phase of design, manufacture and disposal of structures and finally the monitoring of the biodiversity over five years. I think the idea of manufacturing and using artificial reefs to allow animals a larger habitat while the reefs restore themselves is a unique and brilliant idea that can greatly help in the conservation of this environment.