

Dear Delegates,

Welcome to the fourth Metro Detroit Model United Nations Conference. Over the past four years we have worked tirelessly to develop an exciting and innovative Model United Nations format that challenges our delegates in a competitive and inclusive environment. We work year-round to ensure that our staff members are as prepared as possible to ensure that all of our delegates can participate in our debates. Moreover, the topics that you will discuss have been carefully selected for their global importance and the larger questions that they ask. When reading through the following background guide, be sure to analyze and evaluate what larger questions are being provoked by the topic and what commentary these larger questions make about the current international system. Finally, if you have any questions, be sure to reach out to your chairs on the email address provided on their committee page.

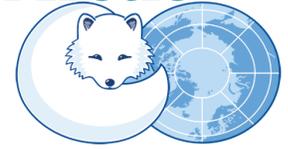
We look forward to welcoming you in January,

Mitchell Dennis

Secretary General of the Metro Detroit Model United Nations IV

Artic Council Topic A 0

Combatting Climate Change in the Arctic Circle



ARCTIC COUNCIL

History of the Arctic Council



The Arctic Council first met in September 1989, when the government of Finland decided that the countries located within and in close proximity to the Arctic Circle needed an organization to protect the valuable ecosystem.¹ The Arctic Council was officially established in 1996 in Ottawa, Canada, and now has eight member states: Canada, Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden, and the United States. The Ottawa Declaration is the governing mandate of the body, and was signed at the Council's forming.² Every two years, the chairmanship of the

Council is rotated, and the eight member states take turns holding the position.

Role of the Arctic Council

The Arctic Council prides itself in having six Permanent Participants, which are organizations that represent one or more groups of indigenous Arctic peoples, to ensure that their opinions are represented and taken into account on important Council decisions.³ The Council consists of six working groups that work on scientific-themed projects to improve the current climate situation in the Arctic Circle. These groups focus on the areas of biodiversity, climate change, sustainability, gas and oil studies, and more.⁴ Task forces can also be established by the Council, and are made up of expert groups to deal with more specific work.⁵ Member states are able to voluntarily decide to participate or not in each endeavor of the Council.⁶ The Arctic Council is unique in that it has no program budget; any funding required comes straight from the member states, or from outside entities that wish to provide financial assistance to the Council's working groups.⁷ Again, note that the Arctic Council does not have the authority to force its members to contribute, financially or otherwise, to any of its causes.⁸

¹ "Frequently Asked Questions." *Arctic Council*. <http://www.arctic-council.org/index.php/en/about-us/arctic-council/faq>.

² *Ibid.*

³ "The Arctic Council: A backgrounder." *Arctic Council*. <http://www.arctic-council.org/index.php/en/about-us>.

⁴ *Ibid.*

⁵ *Ibid.*

⁶ "Frequently Asked Questions." *Arctic Council*. <http://www.arctic-council.org/index.php/en/about-us/arctic-council/faq>.

⁷ "The Arctic Council: A backgrounder." *Arctic Council*. <http://www.arctic-council.org/index.php/en/about-us>.

⁸ "Frequently Asked Questions." *Arctic Council*. <http://www.arctic-council.org/index.php/en/about-us/arctic-council/faq>.

Current Implications of Climate Change in the Arctic Circle

Today in the Arctic Circle, we are experiencing the warmest temperatures on record. The warm temperatures are magnified in the Arctic Circle, as the majority of the surface is covered with ice and/or snow, both of which reflect more sunlight than ground covered by dirt or grass.⁹ The temperature changes in the Arctic Circle are twice as large in magnitude as the changes experienced by the rest of the globe.¹⁰ This increase in heat is decreasing the ice cover in the Arctic Circle, which is causing issues for both wildlife and indigenous peoples. The increase in concentration of greenhouse gases in the atmosphere is contributing to acidification of ocean waters, which poses a problem to all oceans and coastlines across the globe.¹¹ The Arctic Circle holds the world's largest reserves of oil and gas, and many people want to extract these resources for use. However, this process poses an extreme risk to arctic ecosystems and oceans.¹² The indigenous peoples of the Arctic have serious concerns about their quality and patterns of life, as these environmental changes greatly affect them as well.¹³

Significant Changes in Ocean Waters

One of the climactic changes occurring in the Arctic Circle that arguably has the most worldwide effect is the changing ocean waters. Not only are the water temperatures increasing, but the levels are rising with the increased melting of Arctic ice coverage. Also, acidification threatens aquatic wildlife in the Arctic and in other aquatic ecosystems.

Reduction in Ice Coverage

According to the World Wildlife Fund (WWF), 50-70% of the reduction in Arctic ice coverage is directly related to human activity.¹⁴ This ice reduction causes problems for humans across the globe and any Arctic wildlife that relies on the ice for survival. For example, polar bears use this sea ice to hunt seals and to travel to their dens for hibernation and the birth of their cubs.¹⁵ Seals must use the sea ice coverage as a birthing area for their cubs. Sea ice is crucial for these species to maintain a standard pattern of life. The Arctic ice coverage has decreased by approximately 3% every ten years, and, if this pattern continues, the Arctic ecosystem will cease to exist as normal.¹⁶ Reduction of sea ice

⁹ "Arctic Climate Change." *World Wildlife Fund*.

http://wwf.panda.org/what_we_do/where_we_work/arctic/what_we_do/climate/.

¹⁰ "Environment and Climate." *Arctic Council*. <http://www.arctic-council.org/index.php/en/our-work/environment-and-climate>.

¹¹ "Oceans." *Arctic Council*. <http://www.arctic-council.org/index.php/en/our-work/oceans>.

¹² "Arctic Oil and Gas." *World Wildlife Fund*.

http://wwf.panda.org/what_we_do/where_we_work/arctic/what_we_do/oil_gas/.

¹³ "Climate Change in the Arctic: An Inuit Reality." *UN Chronicle*.

<https://unchronicle.un.org/article/climate-change-arctic-inuit-reality>.

¹⁴ "Arctic ice sets another record." *World Wildlife Fund*.

http://wwf.panda.org/what_we_do/where_we_work/arctic/news/?295491/Arctic-ice-sets-another-record.

¹⁵ Ibid.

¹⁶ Ibid.

also decreases the amount of solar radiation that is reflected back into the atmosphere by the ice coverage.¹⁷ This only adds to the surface warming already occurring from greenhouse gases. This contributes to the rising global temperatures, adding another reason to combat this environmental change.

Rising Sea Levels

The melting, and therefore reduction, of sea ice directly results in more melted water entering Arctic waters. This increase in sea water causes rising sea levels across the globe. For island and coastal nations, rising sea levels spell disaster for their development and self-sustainability as a country. It is projected that by 2100, the Arctic glacier ice that will have melted will contribute to a 5 cm rise in sea levels. However, this only makes up a small portion of the 10-90 cm projected total sea rise by 2100.¹⁸ The Arctic Council has the responsibility of dealing with this issue before coastal nations have to resort to evacuations and rescues in coastal areas. Some of the large cities that will be directly affected by this issue include London, Amsterdam, Shanghai, and New York City. The New York City Mayor's office released the city's first "Climate Resiliency Design Guidelines," and included in that report are visual representations of how much water will infiltrate the city between the years 2020 and 2100.¹⁹ These graphics show how dangerous climate change will be to some of the largest and most important global cities.

Acidification

The acidification of the Arctic Ocean is another aspect of global climate change that is having an impact on Arctic ecosystems. Acidification is a process in which the pH of a substance decreases. The acidification of ocean waters is being caused by the increased amounts of carbon dioxide in the atmosphere. The oceans are absorbing more of this carbon dioxide than they have before. When carbon dioxide mixes with the ocean water, carbonic acid is formed, which releases hydrogen ions. The decrease of these ions causes a decrease in the pH of the water.²⁰ With an ecosystem that is generally considered to have low levels of biodiversity, these changes in the Arctic aquatic ecosystem could have major effects on the food chain. Acidification will also have potentially detrimental economic effects for areas that rely on the fishing industry. The changes in ocean waters could change the species of fish that can reside in any given area, causing potentially poor economic situations for fishermen.

Threats to Arctic Biodiversity

¹⁷ "Arctic Climate Change." *GreenFacts*. <http://www.greenfacts.org/en/arctic-climate-change/>.

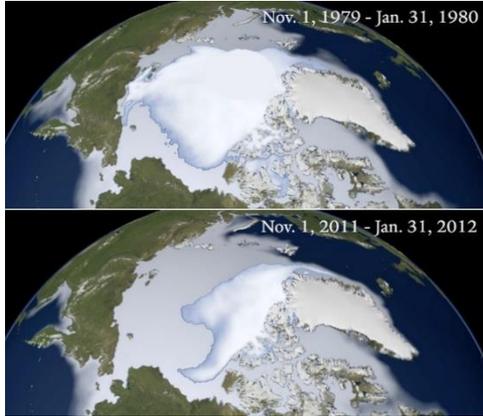
¹⁸ Ibid.

¹⁹ "Sea levels are rising faster than they have in 28 centuries – here's where New York City could flood first." *Business Insider*. <http://www.businessinsider.com/new-york-city-flood-sea-level-rise-2017-5>.

²⁰ "AMAP Assessment 2013: Arctic Ocean Acidification." *Arctic Council*. <http://www.amap.no/documents/doc/AMAP-Assessment-2013-Arctic-Ocean-Acidification/881>.

While the biodiversity of the Arctic may not be as diverse as the Amazon, the ecosystem still is vital to the area's success. With the climate changes occurring in the area, the plants and animals that reside in the Arctic will have to adjust to the ever-changing conditions.

Reduced Feeding Grounds for Arctic Predators



With the increasing global temperatures decreasing the amount of sea ice available in the Arctic, the wildlife that relies on this ice are having to change their habits. The Inuit people, who rely on these animals for their food source, are also having to adapt to the changing climate. Arctic predators, including polar bears, rely on the sea ice to hunt for food. Without the sea ice that normally creates a stable surface over the Arctic Ocean year round, the feeding patterns of many animals may have to change. The arctic species that is arguably the most effected by climate change

is the polar bear. Since their sole opportunity for hunting is provided by the presence of sea ice, the melting of this ice is threatening the entire species.²¹ It also becomes more dangerous for them to hunt in the water, since the absence of sea ice increases the distances they must be able to swim to find food and return to land.²² Studies are also confirming that the polar bears that still alive are losing body weight and carrying fewer cubs, further threatening the future of the species.²³ Polar bears have been placed on the endangered species list, and are under the threat of extinction by 2050.²⁴

Increase in Expected Arctic Temperatures

One of the effects of the Arctic temperature increase is a change to the marine environment; more specifically, the temperature of the Arctic Ocean. This change in temperature will affect the species of fish and other aquatic marine wildlife that can survive in the area. This may have a detrimental impact on the fishing industries of the Arctic Circle. Many people rely on the fishing industry to make a living, and this ecosystem shift could become a serious problem.

Extraction of Oil and Gas from Arctic Reserves

With the always increasing demand for oil and gas, many people consider the Arctic as a prime location for acquiring these resources. However, the risks of drilling in an aquatic ecosystem are severe and costly. This practice also can disrupt the health of both wildlife and indigenous peoples that live in these areas.

²¹ "Global Warming and Polar Bears." *National Wildlife Federation*. <https://www.nwf.org/Wildlife/Threats-to-Wildlife/Global-Warming/Effects-on-Wildlife-and-Habitat/Polar-Bears.aspx>.

²² Ibid.

²³ Ibid.

²⁴ Ibid.

Recent Surge of Fracking in the Arctic

Fracking, short for hydraulic fracturing, is a method of extracting natural gas from underground rock by breaking layers of shale. The high pressure drilling process results in the natural gas exiting the shale layers, where it can then be extracted for use. One advantage of fracking over other extraction methods is the decreased carbon dioxide emissions. However, fracking releases methane, which is a stronger and more harmful greenhouse gas. Currently, the EPA suggests that there is a 2.4% leakage rate of methane, and if this number rises to 3.2%, the advantages of the process will be outweighed by the disadvantages.²⁵ Many fracking companies do not have to release their process data regarding methane emissions. Another major issue regarding fracking is that it is a relatively new process. Therefore, many of the potential risks or issues associated with the process have not yet been encountered, and therefore have no solution if a problem were to arise. While some people believe that fracking is the answer to dealing with fossil fuel emissions since natural gas burns cleaner than coal, the potential problems that could result from fracking could be catastrophic for Arctic waters. In July 2017, the United States Federal Bureau of Ocean Energy Management approved an Italian company to begin fracking off the coast of Alaska.²⁶ Many people fear for the livelihood of Arctic marine wildlife and the health of our oceanic ecosystems, and that an oil spill in these waters would not be easily dealt with as it is remote and difficult to clean marine ecosystems.²⁷

Risk of Oil Spills from Current Extraction Methods

The current method of extracting and transporting oil from any aquatic environment has no proven solution that does not pose a serious risk to this environment.²⁸ An oil spill can range from a small spill from a pedestrian boat, a larger spill from a tanker ship, or a catastrophic spill from a broken pipeline or explosion. Any oil spill is difficult to clean up, and there is currently no proven method for cleaning up an oil spill in cold Arctic waters.²⁹

Industrialization of Arctic Waterways

The Arctic Ocean is suspected to become similar in climatic patterns to the Great Lakes, where the water freezes over during the winter and thaws during the summer.³⁰ With the decrease in ice coverage during the summer months especially, Arctic shipping lanes will become much more crowded with tankers and ships. This will not only create more industrialization in the area, but it will also increase the chances of an oil spill.

The Push for Sustainable and Renewable Energy

²⁵ "Alaska has a New Oil Boom Thanks to Large-Scale Fracking." *Newsweek*.

<http://www.newsweek.com/alaska-oil-fracking-oil-and-gas-arctic-keystone-pipeline-keystone-xl-583982>.

²⁶ "US approves oil drilling in Alaskan waters, prompting fears for marine life." *The Guardian*.

<https://www.theguardian.com/us-news/2017/jul/13/us-approves-oil-drilling-in-alaska-waters-marine-life-fear>.

²⁷ Ibid.

²⁸ "Arctic Oil and Gas." *World Wildlife Fund*.

http://wwf.panda.org/what_we_do/where_we_work/arctic/what_we_do/oil_gas/.

²⁹ Ibid.

³⁰ "Climate Change in the Arctic: An Inuit Reality." *UN Chronicle*. <https://unchronicle.un.org/article/climate-change-arctic-inuit-reality>.

One of the most widely-accepted solutions to oil and gas extraction is the transition to sustainable, clean energy sources. The methods used to extract the oil and gas from the Arctic Circle release greenhouse gases into the atmosphere, and the usage of the energy fuels themselves also releases greenhouse gases. The Arctic Council is interested in investigating new, greener ways of producing energy to power our world.

INUIT and CIRCUMPOLAR PEOPLES



Impact on Indigenous Peoples

While the effects of climate change are occurring around the world, we must remember the groups of people who rely on the Arctic ecosystem for their own survival. These indigenous peoples have some of the same worries about the drastic changes in the Arctic climate, and what impacts these changes will have on their way of life. With

almost four million people living in the Arctic regions, the well-being of the indigenous peoples is vital to the area's long term success.³¹

Decrease in Suitable Living Areas

The main impact influencing the lives of indigenous Arctic peoples is the depletion of their livable environment. For example, the 160,000 Inuit people who live in the Arctic regions rely on seals as their main food source. With the current instability of sea ice, as well as its depletion, it is becoming more difficult to reach their food.³²

Melting Permafrost

Permafrost is defined as the top layer of soil in the Arctic that defrosts in the summer. As global temperatures rise, the amount of permafrost that will melt will eventually increase. As permafrost melts, methane is released into the atmosphere, which is a more potent greenhouse gas than carbon dioxide.³³ The only way to slow this process is to halt the global temperature increase. While this release is not largely contributing to global warming, any decrease in greenhouse gas emissions will be beneficial in the long run. Melting permafrost is also beginning to have structural impacts on settlements in Polar Regions. The citizens of Norilsk, Russia, are experiencing sinking buildings, stairways, and oil drilling infrastructure due to the melting permafrost.³⁴ Two-thirds of Russia is covered by permafrost, so the thawing of this ground layer will eventually have widespread effects

³¹ "Arctic Peoples." *Arctic Council*. <http://www.arctic-council.org/index.php/en/our-work/arctic-peoples>.

³² "Climate Change in the Arctic: An Inuit Reality." *UN Chronicle*. <https://unchronicle.un.org/article/climate-change-arctic-inuit-reality>.

³³ "Arctic Climate Change." *GreenFacts*. <http://www.greenfacts.org/en/arctic-climate-change/>.

³⁴ "Slow-motion wrecks: how thawing permafrost is destroying Arctic cities." *The Guardian*. <https://www.theguardian.com/cities/2016/oct/14/thawing-permafrost-destroying-arctic-cities-norilsk-russia>.

across the entire country.³⁵ Areas of Canada and Alaska also have permafrost, so this issue is only becoming more prominent.

Case Study #1: NASA Study shows a Greening Arctic

NASA has been a prime resource for showing the visual changes of the Earth caused by global warming. One of their recent studies on Arctic climate changes shows that vegetation is slowly beginning to cover more land in the Arctic Circle.³⁶ The temperature changes experienced by the globe have been magnified in the Arctic, and the seasons are beginning to shift. This shift is causing more vegetation to grow and sustain itself in the warmer temperatures. The NASA study found that 29.4% of Arctic land had “greened up” and was showing signs of vegetation coverage, while only 2.9% showed vegetation decline.³⁷ The satellites used by NASA are able to identify and characterize the type of vegetation growing in these regions, providing scientists more information to aid in their research.

Case Study #2: Climate Change Effects in Greenland

Ittoqqortoormiit, Greenland is arguably the most remote village in the world.³⁸ This town is located on the north side of the eastern coast of Greenland, and the village is only accessible by water during July and August. During the winter months, the 452 inhabitants that live here must rely on dogsleds for transportation. The Inuit people have firsthand experience with the changes caused by global warming, and their town has seen the direct effects. Due to the melting glaciers, rising sea level is becoming a serious issue for many coastlines, including Greenland's.³⁹ Ittoqqortoormiit is home to Inuit people who rely on hunting Arctic wildlife for food. With the changes in the Arctic climate, the hunting grounds available for these people are shrinking. The wildlife are also feeling the effects, as they are also not accustomed to the warming temperatures. All across Greenland, glaciers are melting at a rate of 12% decrease in sea ice coverage per decade.⁴⁰ Climate change will have profound effects on small seaside towns, such as Ittoqqortoormiit, if nations do not swiftly act on it.

Questions to Consider

- What will be the long-term effects if ocean levels continue to rise, and what solutions would exist to remedy these potential issues?

³⁵ Ibid.

³⁶ “NASA Studies Details of a Greening Arctic.” *NASA*. <https://climate.nasa.gov/news/2447/nasa-studies-details-of-a-greening-arctic/>.

³⁷ Ibid.

³⁸ “Life in Greenland’s Most Remote Village.” *G Adventures*. <https://www.gadventures.com/blog/life-greenlands-most-remote-village/>.

³⁹ “These Photos Show How Hard Climate Change has Hit Greenland.” *Time*. <http://time.com/4447252/greenland-ice-climate-change/>.

⁴⁰ Ibid.

- What governmental regulations could be implemented, that haven't been already, to help with the impacts of global warming?
- How can the Arctic Council work towards helping its member nations' citizens to live more sustainably?
- What can the Arctic Council do to convince non-members that the issues occurring in the Arctic Circle will affect everyone across the world?
- How can the Arctic Council ensure that the nation contributing the most to global warming take steps to increase sustainability?
- How can the Arctic Council deal with climate change deniers and those who don't think these changes are part of an unnatural, non-cyclic warming of our globe?
- Does the Arctic Council expect developing nations, who likely did not contribute significantly to climate change, to make great strides towards combatting and preventing climate change?
- How can we balance the effects of industrialized human life with the importance of preserving the Arctic ecosystem?
- Should the Arctic Council focus more on combatting climate change itself or on combatting the effects of the climate change?