



WCDMUN 2023 Briefing Papers

Ecology & Environment





Topic 1: TQO Oil Spills

Oil spills are environmental disasters that can have devastating consequences for ecosystems, wildlife, and human communities. These incidents occur when crude oil or refined petroleum products are released into the environment, typically into bodies of water such as oceans, rivers, or lakes. This briefing paper aims to provide an overview of oil spills, their causes, impacts, and mitigation efforts.

In the Refugio State Beach Oil Spill in 2015, 540 metric tons of oil leaked into the ocean and only five years previous one of the most environmentally devastating oil spills occurred. The Deepwater Horizon oil spill is one of the largest environmental disasters in history. Approximately 4.9 million barrels of oil leaked into the Gulf of Mexico over several months. These are just two examples of major oil spills throughout history. Accidents during oil drilling, transport, and storage can lead to large-scale oil spills. Examples include tanker collisions, pipeline ruptures, and well blowouts. Routine operations in the oil industry can result in smaller but continuous oil releases, such as leaks from offshore platforms or discharge of oily water from ships. Hurricanes, earthquakes, and tsunamis can damage oil infrastructure and lead to spills. Illegal dumping of oil by vessels looking to avoid disposal costs is a significant issue. Oil spills harm marine and terrestrial ecosystems, causing long-term damage to aquatic life, vegetation, and coastal habitats. Birds, fish, marine mammals, and other wildlife are vulnerable to oil contamination, which can result in mass mortality, disruption of breeding, and habitat degradation. Fishing and tourism industries often suffer as a result of oil spills, impacting local economies. Exposure to oil and its toxic components can pose health risks to humans, including respiratory problems and skin issues. Oil can persist in the environment for years, affecting ecosystems long after the initial spill.

Mitigation and Response Efforts over the years include strict regulations, regular maintenance of infrastructure, and improved safety protocols. Emergency responses such as environmental remediations and bioremediation are employed to clean affected areas. Legal Measures have also been taken like laws and treaties, such as the Oil Pollution Act of 1990 and the International Convention on Oil Pollution Preparedness, Response, and Cooperation, to hold parties responsible for oil spills.

In conclusion, oil spills remain a significant environmental concern with far-reaching consequences. Efforts to prevent spills, respond effectively when they occur, and remediate the damage are essential in protecting ecosystems and human well-being. Continued research and international cooperation are key to minimizing the impact of oil spills on our planet.



Topic 2: TQO the Loss of Native Woodland

The loss of native woodland is a pressing environmental issue with far-reaching ecological, economic, and societal consequences. Native woodlands play a vital role in maintaining biodiversity, mitigating climate change, and providing a wide range of ecosystem services. However, they are under threat from various factors, including deforestation, urbanization, agricultural expansion, and climate change. This briefing paper explores the key issues surrounding the loss of native woodland and presents potential solutions to address this critical problem. Native woodlands, consisting of tree species that are naturally found in a specific region, are essential components of ecosystems. They provide habitat for wildlife, support pollinators, and improve water quality by preventing soil erosion. Native woodlands are often biodiversity hotspots, hosting a diverse range of plant and animal species. Their loss can result in the extinction of species and disrupt local ecosystems. Native woodlands act as carbon sinks, capturing and storing carbon dioxide from the atmosphere. This contributes to climate change mitigation efforts.

Brazil is home to a significant portion of the Amazon Rainforest, one of the world's most biodiverse and critical ecosystems. Deforestation in Brazil primarily occurs in the Amazon Basin, but it also affects other regions like the Atlantic Forest and the Cerrado. Over the years, Brazil has experienced high rates of deforestation, with the Amazon being particularly vulnerable. Problems such as agricultural expansion, infrastructural development and illegal land grabs as methods of economic expansion have all contributed to deforestation in Brazil. Large-scale deforestation for agriculture, logging, and infrastructure development is a significant driver of native woodland loss. This activity not only reduces forest cover but also disrupts the integrity of ecosystems. Rapid urban expansion encroaches on native woodlands, leading to habitat fragmentation and degradation. Urban development often results in the loss of valuable green spaces. Changes in temperature and precipitation patterns due to climate change can affect the health of native woodlands. Prolonged droughts, increased wildfires, and invasive species are some of the challenges they face. The loss of native woodlands represents a critical environmental challenge that requires immediate attention and action. Preserving these ecosystems is not only essential for biodiversity and climate change mitigation but also for the well-being of future generations.



Topic 3: TQO the Environmental Impact of Military Operations

Military operations have historically played a significant role in shaping global geopolitics and addressing security concerns. However, these operations often have substantial environmental consequences that deserve careful consideration. This briefing paper provides an overview of the environmental impact of military operations, highlighting key areas of concern and potential strategies to mitigate these impacts.

Military operations encompass a wide range of activities, from training exercises to combat deployments. These activities have the potential to significantly impact the environment, including air, land, and water resources. Understanding and addressing these environmental impacts is essential for promoting sustainability and minimizing harm to ecosystems. Military operations require vast amounts of resources, including fuel, water, and materials. The extraction, transportation, and use of these resources contribute to greenhouse gas emissions, water scarcity, and deforestation. Military training areas and conflict zones often overlap with ecologically sensitive regions. The construction of military infrastructure, vehicle movements, and munitions testing can lead to habitat destruction and fragmentation, threatening wildlife populations. Military activities release pollutants into the environment, such as oil spills, hazardous chemicals, and heavy metals from munitions. These pollutants can contaminate soil, water bodies, and the air, posing risks to both ecosystems and human health. Military exercises involving artillery fire, aircraft, and explosions generate high levels of noise pollution, disrupting wildlife habitats and causing stress in nearby communities. Unexploded ordnance, leftover from conflicts, can pose long-term risks to both human and environmental health. These remnants can explode when disturbed, contaminating the environment with hazardous materials.

Across the Middle East war and conflict there has left a severe ecological and environmental impact. This can include debris polluting nearby water sources, abandoned military hardware and the use of toxic, chemical or radioactive weapons can leave some areas unusable for agriculture. The environmental impact of military operations is a complex and multifaceted issue that requires careful consideration and proactive mitigation strategies. By adopting sustainable practices and minimizing harm to ecosystems, military forces can contribute to global environmental conservation efforts while fulfilling their security mandates.