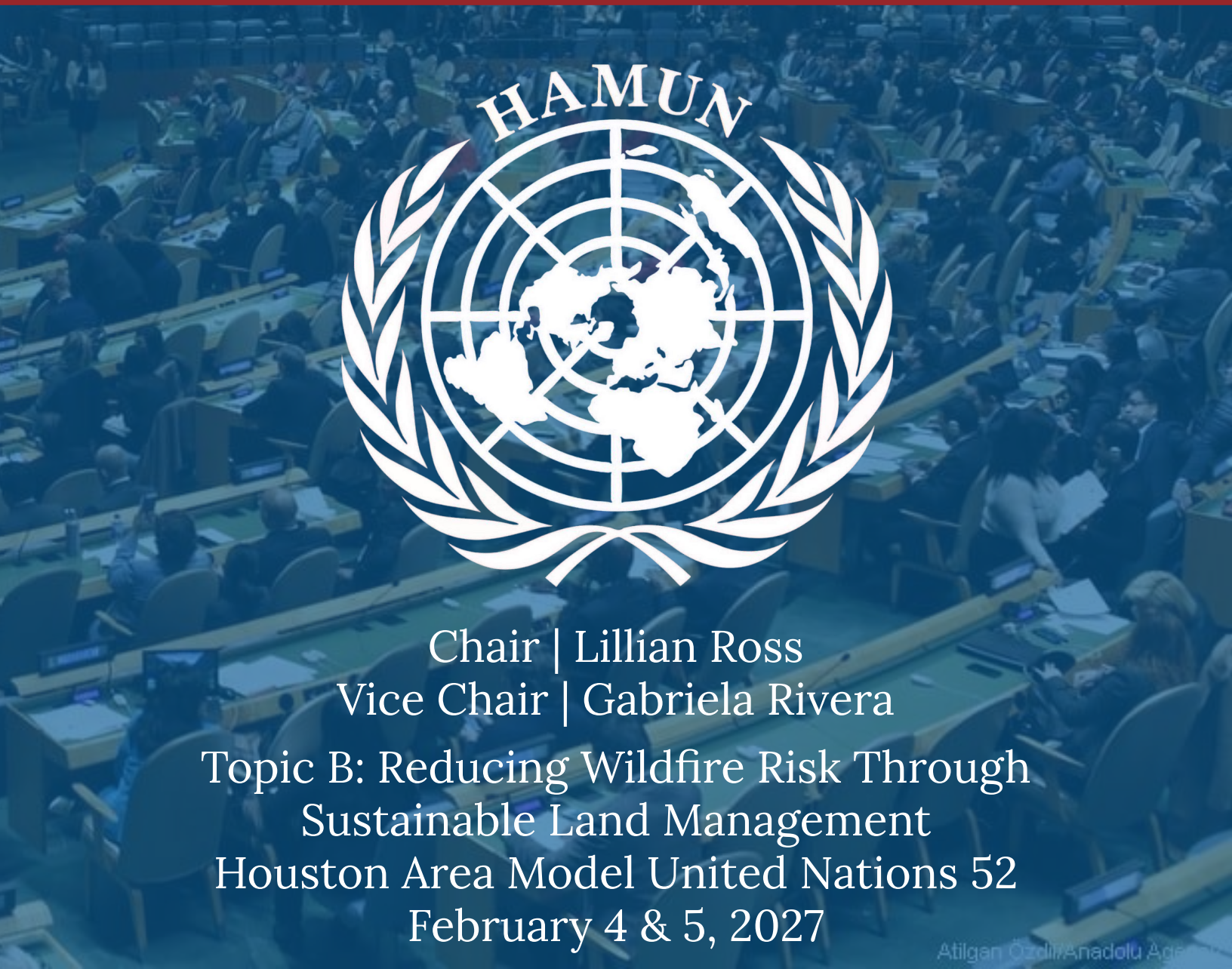
Houston Area Model United Nations
Standard Committee

UNEP



Chair | Lillian Ross
Vice Chair | Gabriela Rivera

Topic B: Reducing Wildfire Risk Through Sustainable Land Management
Houston Area Model United Nations 52
February 4 & 5, 2027

Atilgan Ozdil/Anadolu Ag

Chair Letter



Delegates,

Welcome to HAMUN! My name is Lillian Ross, and I will be your chair for this year's United Nations Environmental Program.

I am currently in my sophomore year at UT Dallas studying biochemistry with a minor in dance. Since 2021, when I started Model UN, I have been a delegate in a total of 11 conferences. I also served as a vice chair last year for HAMUN. Throughout high school and college, MUN has helped me grow as an academic and as a person. It has shaped how I view the world, how I perceive global events, and helped hone my critical thinking skills. At its core, Model UN is a program that allows you to expand your worldview and enhances your ability to make informed arguments- both verbally and on paper.

I chose to staff UNEP for many reasons. Firstly, I am passionate about the environment and conservation efforts. I would like to see the unique perspectives the next generation will bring to modern issues relating to conservation, sustainability, and restoration. Secondly, a larger committee often allows delegates to form multiple groups with different approaches to the issue. Finally, UNEP topics are inclusive. Every Member State is affected by the local, regional, and global environment, and every Member State has a place to contribute meaningful solutions based on their own environmental, social, and economic contexts.

The most important part of this conference is to enjoy it and make a memorable experience for yourself. Everyone- myself, your teachers, and other HAMUN staff- is here to help you learn and grow. If you have any questions, don't hesitate to reach out to me. I am excited to meet and work with all of you!

Lillian Ross
UN Environmental Program
rosslillian93@gmail.com

Committee Background

History

The United Nations Environment Programme (UNEP) was established in 1972 following the United Nations Conference on the Human Environment in Stockholm. Headquartered in Kenya, UNEP has played a critical role in addressing a wide variety of issues, including pollution, climate change, biodiversity loss, and ecosystem degradation over its 54-year history. The impacts of these actions have been immense. For example, the Basel Convention (1989), adopted under UNEP's guidance, limits transboundary movement of hazardous wastes ("The Basel Convention"). Also led by UNEP, the Rio Earth Summit (1992) produced five major global agreements centering on sustainable development ("United Nations Conference on Environment and Development"). These achievements have demonstrated how crucial international collaboration has become as environmental challenges grow in scale and complexity. As the leading global authority on environmental issues within the United Nations system, UNEP recognizes the need for collaboration and works to coordinate responses to environmental challenges and promote sustainable development.

Mandate

Through scientific research, policy development, and multilateral cooperation, UNEP aims to protect the global environment while promoting a sustainable and resilient future for communities around the world. However, as 95% of UNEP's funding comes from voluntary donations ("Funding") and resolutions are non-binding, the mandate of the committee is limited to making recommendations and encouraging international cooperation.

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Topic Background

Summary
Wildfires are natural occurrences that promote the health of environments through nutrient recycling. However, human activity and climate change have increased the frequency and severity of wildfires, turning a natural process into a destructive force. As climate change proliferates hot and dry conditions, wildfire risk increases drastically. This poses a significant threat to ecosystems and human settlements through habitat loss, soil degradation, air pollution, and elevated carbon emissions. Sustainable management helps maintain ecosystem health while supporting communities that depend on forests, grasslands, and other vulnerable landscapes.

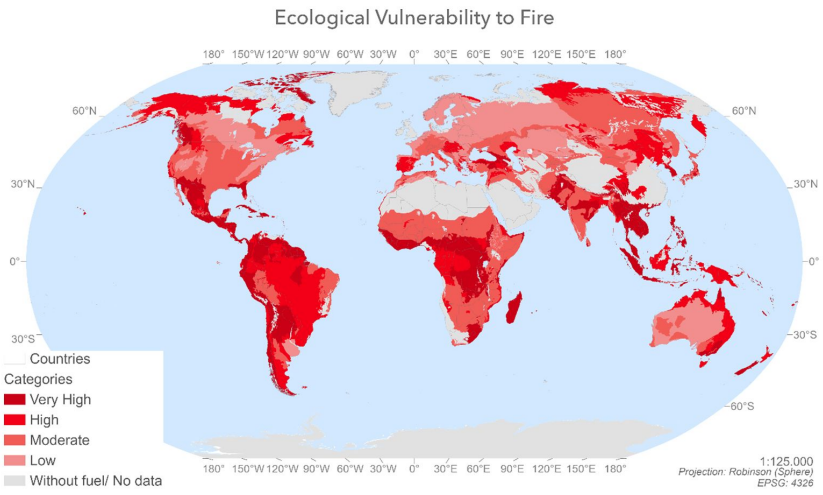
Approaches to these issues may differ between Member States. Perspectives will be shaped by individual experiences with wildfires, including the frequency, severity, and type of fires, climate, ecosystems, and land-use practices. Balancing the preservation of core economic sectors like agriculture and forestry with implementation of sustainable land management programs that aim to reduce wildfire risk should be central to discussion.

Overview
Over the past two decades, the number of people directly exposed to wildfires has increased by over 40% (Institute for Water, Environment and Health), with over 390 million hectares burned globally in 2025 (“The invisible costs”). This increase has had devastating consequences for both human health and the environment. To combat these consequences and make wildfire prevention more effective, it is important to understand what causes wildfires.

Topic Background

What Causes Wildfires?

While wildfires can occur naturally, their increasing prevalence suggests that wildfires can also be caused by human activity and climate change. Concerning climate change, draughts induced by decreased rainfall and increased temperatures can cause vegetation to become dry. This dry vegetation is easily ignited and can lead to expansive wildfires if not contained in an early stage ("Wildfires" - UNDRR). Considering the current trajectory of climate change, the probability of extreme wildfire events is projected to increase by up to 57% by the end of the century. In addition to wildfire severity increasing due to climate change, wildfires are becoming more common due to human activity: 80% to 95% of global wildfires are started by human activity ("Wildfires" - WHO). These activities include unsupervised campfires, which can ignite vegetation, and poor farming practices, which can erode soil. Thus, successful management strategies must address both the vulnerability of the environment they work in as well as the common causes of fires in the region.

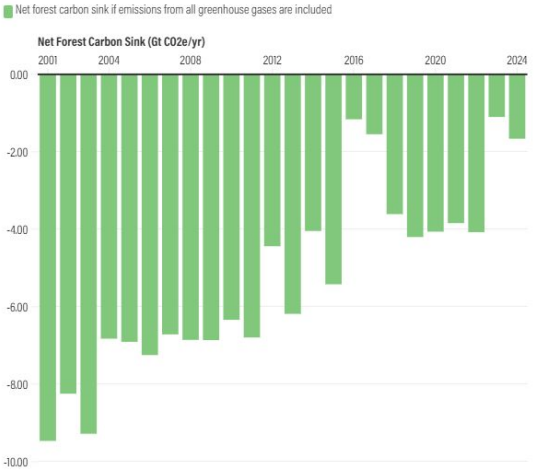


Some regions are more ecologically vulnerable to wildfires than others. (Arrogante-Funes)

Topic Background

Environmental Impacts

Forests act as carbon sinks- systems that absorb more carbon dioxide than they release. These systems are integral to slowing climate change, as carbon dioxide is the most common greenhouse gas released by human activity (Center for Climate and Energy Solutions). In 2023 and 2024, forests absorbed 75% less carbon dioxide than they had in 2022 (Harris and Rose) while wildfires released 1.8 billion tons of carbon dioxide ("Prevention is the best defence"). The decreasing effectiveness of forests as carbon sinks is partially attributed to wildfires, which release greenhouse gases and prevent forests from absorbing carbon dioxide. In addition to this, wildfires lead to multiple types of pollution- including air and water contamination. Smoke from wildfires, which can travel thousands of kilometers ("Wildfires" - WHO), contributes to air pollution. Meanwhile, when unnatural materials like plastics burn, they eventually migrate to waterways and create water pollution (International Fund for Animal Welfare). Furthermore, the pollution and habitat destruction from wildfires decreased biodiversity in impacted areas (Davare), thus making it more difficult for the ecosystem to recover and continue to absorb carbon.

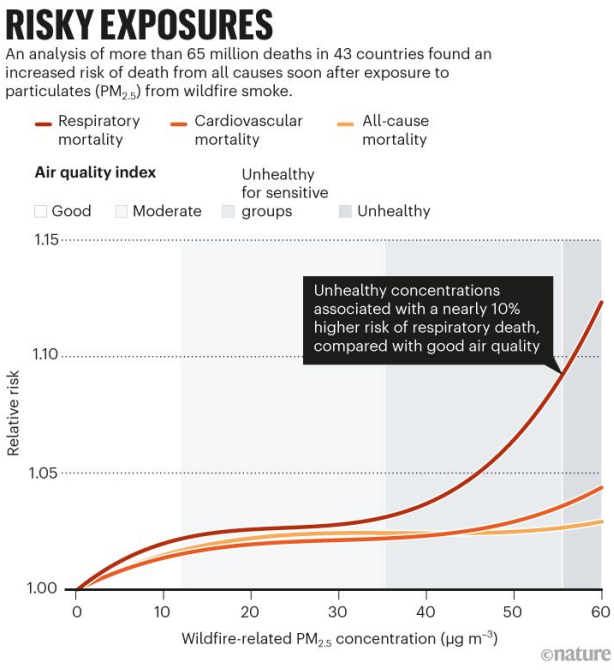


Forests are becoming less effective carbon sinks due to wildfires. (Center for Climate and Energy Solutions)

Topic Background

Human Health and Safety

Wildfires have a clear impact on human health. With wildfire smoke pushing air pollution levels to 60 times World Health Organization (WHO) standards ("The invisible costs"), smoke inhalation is directly linked to over 150,000 deaths every year (World Meteorological Organization). A further 500,000 are displaced due to wildfires (Hernan). These displacements lead to emotional impacts as communities are separated and physical impacts as income is interrupted. Water pollution also has a profound impact, with drinking water sources remaining contaminated for up to 8 years after a fire ("The invisible costs"). Additionally, wildfires can destroy crops and reduce the fertility of soil (World Migration Report), resulting in food insecurity for millions of people (World Food Program). Finally, wildfires leave land vulnerable to future natural disasters. Floods, landslides, and dust storms are made more likely as vegetation is burnt away. Thus, the plethora of threats to human health and safety make preventing wildfires a top priority.



Wildfires and the resulting pollution cause thousands of deaths every year. (Kozlov)

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History

United Nations Conference on Desertification (UNCOD), held in 1977, is widely regarded as one of the first international conferences to center on land degradation (United Nations Climate Security Mechanism). Following this foundational framework, the Rio Earth Summit (1992) incorporated the idea of land degradation with sustainable land use, forests, and environmental management. In 2015, these ideas culminated in the development of the 2030 Agenda, which establishes 17 Sustainable Development Goals (SDGs). In particular, SDG 15 (Life on Land) and SDG 13 (Climate Action) explicitly link sustainable land use to the prosperity of ecosystems and humans as well as the reduction of destructive events like wildfires.

Case Study

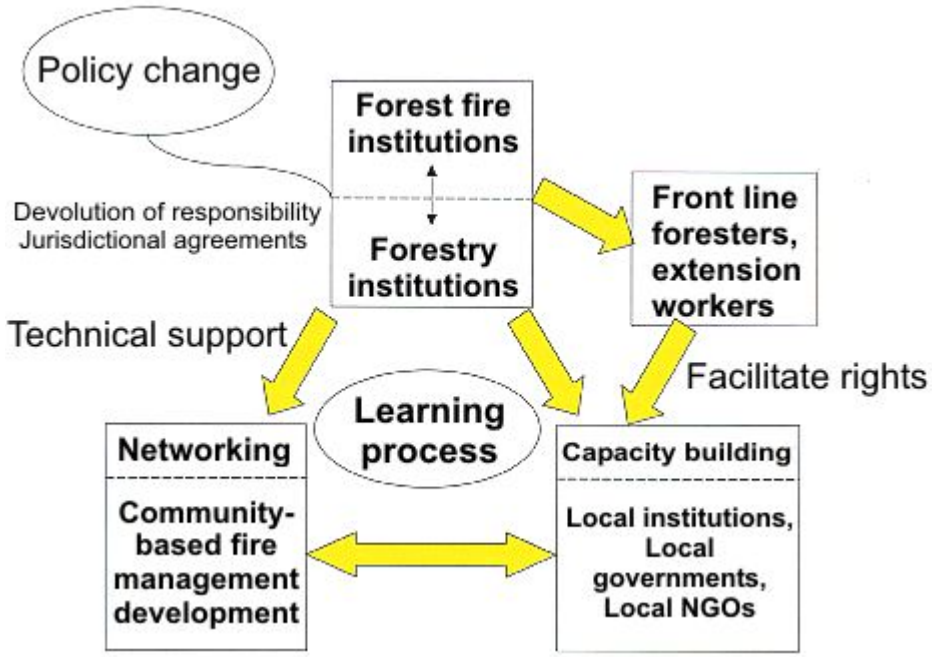
Community-based fire management (CBFiM) is an effective strategy for reducing the frequency of wildfires. The United Nations Food and Agriculture Organization (FAO) studied the impacts of this method in Wenyime Village from 1950 to 2000 (Lichang). The People's Republic of China (PRC) provided incentives for villages to engage in sustainable land management in order to reduce natural disasters like wildfires. Wenyime Village, which is considered one of the most fire-prone areas in Dayao county, responded to these incentives. In the field study from FAO, researchers found that the villagers had a profound knowledge of wildfires, fire fighting, and fire prevention. This knowledge correlates with the village's belief that fire safety is everybody's responsibility- resulting in sustainable land management practices.

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Included in these practices are public awareness campaigns, refraining from lighting fires in vulnerable areas, and containing dead or dry vegetation like fallen leaves. These strategies have proven to be effective. The last significant wildfire in Wenyime Village took place in 1966- after which the new land use regulations took place.

The success seen in Wenyime Village provides a potential template for international efforts- government incentives paired with community land management. Should collaborative, transboundary efforts become more common and emphasize community involvement, wildfire management can become more sustainable and effective.



(Ganz) A potential pathway for community-based fire management (CBFiM).

QUESTIONS TO CONSIDER

- What role can international organizations play in sharing successful wildfire prevention and restoration practices?
- How can scientific research and data-sharing improve international wildfire management?
- What role should Indigenous, local, and scientific knowledge play in wildfire prevention and restoration?
- How can Member States reduce wildfire risk while maintaining the ecological benefits of natural fire?
- To what extent can the principles of community-based fire management be applied on an international scale?

APPENDIX & SOURCES

Arrogante-Funes, F., et. al.. "Global Assessment and Mapping of Ecological Vulnerability to Wildfires." *Natural Hazards and Earth System Sciences*, 9 Sept 2022, https://nhess.copernicus.org/articles/22/2981/2022/.

Davare, R.. "The Impact of Wildfires on Biodiversity and the Environment." *Earth.Org*, 5 Aug 2022, https://earth.org/impact-of-wildfires/.

"Extreme Weather." *World Food Programme*, https://wfpusa.org/hunger/issues/extreme-weather/.

"From Climate Change to Food Insecurity: Compounding and Direct Drivers of Human Mobility." *International Organization for Migration*, 2024, https://worldmigrationreport.iom.int/what-we-do/world-migration-report-2024/chapter-7/climate-change-food-insecurity-compounding-and-direct-drivers-human-mobility.

"Funding." *United Nations Environment Programme*, https://www.unep.org/en/who-we-are/funding.

Ganz, D., et. al.. "Community-Based Fire Management Case Studies from China, The Gambia, Honduras, India, Lao People's Democratic Republic and Turkey." *Food and Agriculture Organization of the United Nations*, 2003, https://www.fao.org/4/ad352t/AD352T02.htm.

Harris, N. and Rose, M.."World's Forest Carbon Sink Shrank to Its Lowest Point in at Least 2 Decades, Due to Fires and Persistent Deforestation." *World Resources Institute*, 24 July 2025, https://www.wri.org/insights/forest-carbon-sink-shrinking-fires-deforestation.

HAMUN

APPENDIX & SOURCES

Hernan, X.. "Wildfire Displacement Is on the Rise: 2025 Sends a Clear Warning." *Internal Displacement Monitoring Centre*, 6 Aug 2025, https://www.internal-displacement.org/expert-analysis/wildfire-displacement-is-on-the-rise-2025-sends-a-clear-warning/.

"How Wildfires Impact Wildlife." *International Fund for Animal Welfare*, https://www.ifaw.org/journal/wildfires-impact-wildlife.

"The Invisible Costs of Wildfire Disasters in 2025." *United Nations Office for Disaster Risk Reduction*, 13 January 2026, https://www.undrr.org/news/invisible-costs-wildfire-disasters-2025.

Kozlov, M.. "How Record Wildfires Are Harming Human Health." *Nature*, 24 Nov 2021, https://www.nature.com/articles/d41586-021-03496-1.

Lichang, Z., et. al.. "Community-Based Fire Management in Wenyime Village, Sanchahe Township, Dayao County, Chuxiong Yi Autonomous Prefecture, Yunnan Province, China." *Food and Agriculture Organization of the United Nations*, October 2001 https://www.fao.org/4/AD352t/AD352T03a.htm#P0_0.

"Main Greenhouse Gases." *Center for Climate and Energy Solutions*, https://www.c2es.org/content/main-greenhouse-gases/.

"The Number of People Exposed to Wildfires Nearly Doubles, with Africa Bearing the Greatest Burden." *United Nations University Institute for Water, Environment and Health*, 25 Aug 2025, https://unu.edu/inweh/news/number-people-exposed-wildfires-nearly-doubles-africa-bearing-greatest-burden.

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APPENDIX & SOURCES

"Particulate Matter from Wildfires Causes Globally over 100,000 Annual Deaths—Impacts of Fire Smoke and Desert Dust Are Unevenly Distributed between Continents." *World Meteorological Organization*, 29 Oct 2025, https://wmo.int/media/news-from-members/particulate-matter-from-wildfires-causes-globally-over-100000-annual-deaths-impacts-of-fire-smoke.

"The Basel Convention." *The Basel Convention*, https://www.basel.int/.

"The 17 Goals." *United Nations Department of Economic and Social Affairs*, https://sdgs.un.org/goals.

"United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 3–14 June 1992." *United Nations*, https://www.un.org/en/conferences/environment/rio1992.

"United Nations Convention to Combat Desertification (UNCCD) and Climate, Peace and Security." *United Nations Climate Security Mechanism*, https://www.un.org/climatesecuritymechanism/en/united-nations-convention-combat-desertification-unccd-and-climate-peace-and-security.

"Wildfires." *United Nations Office for Disaster Risk Reduction*, https://www.undrr.org/understanding-disaster-risk/terminology/hips/en0205.

"Wildfires." *World Health Organization*, https://www.who.int/news-room/fact-sheets/detail/wildfires-and-health.

"Wildfires: Prevention Is the Best Defence, UN Says." *United Nations*, 3 July 2026, https://news.un.org/en/story/2026/07/1168054.

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