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ECOSOC 1: High-level Political Forum on Sustainable Development (HLPF)

Research Report

Topic 3: Identifying and implementing necessary measures against forest-fires.



YEE MING DA

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Introduction

Fire has many benefits, such as cooking our food and giving some warmth to survive the harsh winters. Too much of it, however, can be detrimental to the environment, the ecosystem and civilisation. Spreading from tree to tree in a matter of minutes, an entire forest can become a national disaster overnight. Given its destructive nature, containing and minimising its aftermath is a constant issue we still face today.

As such, this report serves to give an insight into the detrimental effects of forest fires and possible solutions for them.

Definition of Key Terms

Forest fires: Refers to wildfires that are uncontrolled, often occurring in rural areas with high vegetation.

Crown fires: They are fires that burn trees up to their crown.

Surface fires: They are fires that tend to burn litter, duff and wherever there is a large plane of land with an abundance of vegetation.

Ground fires: Refers to fires that occur in deep accumulations of humus, peat and similar dead vegetation that become dry enough to burn.

Background Information

Forest fires are wildfires that are uncontrolled fires that burn in wildland vegetation, often in rural areas. They tend to burn in forests, grassland, savannas and other ecosystems.¹ This is an issue because trees and similar vegetation are highly flammable, increasing the risk of fires occurring. What makes this worse however, are the aftermaths of these fires. A few of these aftermaths include the increased rates of homelessness, disruption to the natural habitats and food supply chains of animals, and increased amounts of carbon dioxide which directly contributes to climate change. In order to avoid this, it is necessary to understand the different types of forest fires there are and how to combat them.

To begin with, the first out of the four types of forest fires is the crown fire. This refers to when the fires burn trees up to their length top. What makes this particularly dangerous is how common and fast this type of fire can spread. Trees in the forest are often densely packed, making it easy for fires to jump from one crown to the other. To combat the crown fire when it occurs, a wide stripe of surface needs to be pre-burnt in order to create a dead zone making it so

¹ "Wildfires," accessed December 24, 2024, <https://education.nationalgeographic.org/resource/wildfires>.

that the fire no longer has any fuel to continue burning on.² However, considering the extreme distance and speed at which the fire can spread, by the time the fire is extinguished, the damage done to the area would be beyond savable.

Another type of fire most present in rural areas are surface fires. Rural areas often have an abundance of vegetation, such as grasslands, forests, and agricultural fields which are all fuel for surface fires. This means that these areas are more susceptible to natural ignition such as lightning in a storm. To put this into perspective, when lightning strikes during a storm, it is easier for fires to spark and spread in these rural areas due to its high fuel availability, marking the beginning of yet another surface fire. To combat this, farmers and landowners often resort to the removal of vegetation, while creating a barrier around the fire by burning a controlled section to deprive it of oxygen, stopping its spread.

Finally, the last type of forest fire is the ground fire, often caused by a deep accumulation of humus, peat and similar dead vegetation that become dry enough to burn. Unlike the other two, the treatment for such a fire is to flood the entire area, excavating and covering the fire to cut off the supply of oxygen. However, the similarity of these three types of fires are its place of occurrence, which are the rural areas due to its endless supplies of fuel, allowing it to burn for as long as there is an abundance of fuels.

² “Prevention and Control of Wildfires in the Vicinity of Inhabited Localities,” accessed December 24, 2024, <https://www.fao.org/4/XII/0730-B3.htm>.

Major Countries and Organisations Involved

Country	N. Events	Damage (millions \$)
United States	64	17,787
Indonesia	9	9,329
Canada	20	6,463
Portugal	8	3,475
Spain	14	2,754
Australia	30	2,645
Greece	13	2,425
Russia	22	2,183
Mongolia	3	1,823
Italy	7	1,700
Chile	9	880
South Africa	9	440
Israel	3	315
Malaysia	4	302
Yugoslavia	2	200
China	6	110
Argentina	5	100
Mexico	3	91
Nicaragua	3	80
Croatia	5	38

Figure 1, chart pertaining to countries that sustained the most damages due to wildfires.³

It is important to note that while the order of these countries may vary each year, these countries are still consistent in their place in the top twenty major countries affected by wildfires each year.

³ “The 20 Countries Most Affected, in Terms of Economic Damage, by... | Download Table,” accessed December 24, 2024, https://www.researchgate.net/figure/The-20-countries-most-affected-in-terms-of-economic-damage-by-wildfire-disasters-for_tbl2_269405335.

Relevant UN Resolutions

1. United Nations Strategic Plan for Forests 2017-2030

- a. Operative Clause 1: "*Encourages* member states to integrate sustainable forest management into national development plans to mitigate the impacts of wildfires on ecosystems and communities."
- b. Operative Clause 2: "*Requests* the establishment of partnerships to enhance global cooperation and technology transfer for the prevention, monitoring, and suppression of forest fires."

2. UN/DESA Policy Brief #111: Wildfires – a growing concern for sustainable development

- a. Operative Clause 1: "*Calls upon* all nations to adopt integrated fire management systems, combining traditional knowledge and modern technology to reduce fire risks and manage their impact effectively."
- b. Operative Clause 2: "*Recommends* increased investment in early warning systems and satellite-based fire monitoring to provide timely data for risk mitigation."

3. Resolution on Cost-effective, Efficient, and Rapid CO2 Emissions Reduction by Extinguishing Global Forest Fires

- a. Operative Clause 1: "*Supports* the creation of a global forest fire brigade network under a transnational framework to ensure rapid response to large-scale forest fires."
- b. Operative Clause 2: "*Advocates* for funding mechanisms to finance fire suppression activities and research on sustainable fire management solutions."

Previous Attempts to Solve the Issue

What needs to be addressed however, are the preventative measures to avoid these fires from even occurring in the first place. Given its aggressive nature, the constant cycle of forest fire will continue to increase the problems of climate change which in turn, increases the amount of forest fires that can occur. A few of these measures to solve this are as follows:

Integrated Fire Management (IFM):

- In the UN/DESA, the goal of the IFM is to encourage community-based fire management by training and equipping the local populations to act as first responders.
- It combines fire prevention, preparedness, suppression and recovery strategies with ecological and social consideration.

Global Forest Goals and Targets (UN Strategic Plan for Forests 2017-2030):

- It is an initiative that includes targets such as Goal 1.3, which aims to significantly increase the area of protected forests worldwide and enhance their resilience to disturbance, including wildfires.

International Fire-Fighting Coordination and Response Mechanisms:

- It is a proposal for fostering a global network for fire brigades or rapid-response teams under the UN coordination.
- It was established as an international fund to support rapid deployment of resources to areas affected by forest fires.

Early Warning Systems and Technology Deployment:

- Utilisation of advanced technology such as satellite monitoring, AI-based prediction tools and drone surveillance.
- Its implications are often cited from the Global Fire Early Warning System (GFEWS) by FAO, a UN partnered organisation.

Public Awareness and Education Campaigns:

- To educate communities on the fire risks, prevention measures and emergency response in order to equip its people with the needed protocols to prevent such forest fires from ever occurring.
- It is often most predominantly found in the Sustainable Development Goals (SDG) agenda, Goal 13 (Climate Action).

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