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A RAPID RESPONSE ASSESSMENT

SPREADING LIKE WILDFIRE

THE RISING THREAT OF EXTRAORDINARY LANDSCAPE FIRES

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A RAPID RESPONSE ASSESSMENT

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Foreword

Across Earth's ecosystems, wildfires are growing in intensity and spreading in range. From Australia to Canada, the United States to China, across Europe and the Amazon, wildfires are wreaking havoc on the environment, wildlife, human health, and infrastructure. *Spreading like Wildfire: The Rising Threat of Extraordinary Fires* is the first report by UNEP and GRID-Arendal to take stock of the scale and extent of the global wildfire crisis and has been commissioned in support of the UN Decade of Ecosystem Restoration. Over 50 experts from research institutions, government agencies, and international organisations from around the globe have contributed to this report. Their findings are that while the situation is certainly extreme, it is not yet hopeless.

Fire is changing because we are changing the conditions in which it occurs. Not all fires are harmful, and not all fires need to be extinguished as they serve important ecological purpose. However, wildfires that burn for weeks and that may affect millions of people over thousands of square kilometres present a challenge that, right now, we are not prepared for. Lightning strikes and human carelessness have always – and will always – spark uncontrolled blazes, but anthropogenic climate change, land-use change, and poor land and forest management mean wildfires are more often encountering the fuel and weather conditions conducive to becoming destructive. Wildfires are burning longer and hotter in places they have always occurred, and are flaring up in unexpected places too, in drying peatlands and on thawing permafrost.

The costs in human lives and livelihoods can be counted in the number who perish in the flames, or contract respiratory diseases from the toxic smoke, or in the number of towns, homes, businesses, and communities affected by fire. A recent study published in *The Lancet* indicates that annual exposure to wildfire smoke results in more than 30,000 deaths across the 43 countries included in the study. Other species also pay the price: besides a devastating loss of habitat, the smouldering swathes of land left behind in a wildfire's wake are scattered with the charred remains of animals and plants possibly fast-tracking extinctions. Last year, fires that got out of control in the Pantanal, the world's largest tropical wetland in Latin America, destroyed almost a third of one of the world's greatest biodiversity hotspots and there are now genuine concerns that this wetland will never fully recover. Not only can wildfires reduce biodiversity, but they contribute to a climate change feedback loop by emitting huge quantities of greenhouse gases into the atmosphere, spurring more warming, more drying, and more burning.

Over 50 experts from research institutions, government agencies, and international organisations from around the globe have contributed to this report. Their findings are that while the situation is certainly extreme, it is not yet hopeless.

The heating of the planet is turning landscapes into tinderboxes, while more extreme weather means stronger, hotter, drier winds to fan the flames. Too often, our response is tardy, costly, and after the fact, with many countries suffering from a chronic lack of investment in planning and prevention. This report makes it clear that the true cost of wildfires – financial, social, and environmental – extends for days, weeks, and even years after the flames subside. To better prepare ourselves and limit the widespread damage done by wildfires, we need to take heed of the clear warnings and recommendations for future action outlined in this report. We must work with nature, communities, harness local knowledge, and invest money and political capital in reducing the likelihood of wildfires starting in the first place and the risk of damage and loss that comes when they do. For policymakers, these are the crucial next steps:

1 Audit your full wildfire costs and invest in planning, prevention, and recovery, not just response: One assessment estimated the annualized economic burden from wildfire for the United States to be between $71.1 billion to $347.8 billion ($2016 US). Most nations do not have any assessment. Commonly, more than half the expenditures related to wildfires are for response, while planning typically receives just 0.2 per cent of the total budget for wildfires. However, to reduce the outsized costs from damage and loss – which greatly exceeds all spending on wildfire management – we need to rebalance our efforts. While more work is required to determine the optimal allocation for each country, as a starting point, countries may consider rebalancing investments by up to 1 per cent for planning, 32 per cent for prevention, 13 per cent for preparedness, 34 per cent for response, and up to 20 per cent for recovery.

2 Learn from others, best practice is out there: Governments and communities need to proactively learn from each other's experiences, seeking out best practices and inspiring examples from around the world with the sharing of data, information, and analysis to improve forecasting and learning. Specific efforts to

include both indigenous leaders and women in disaster risk management is crucial as research has shown that their input on risk reduction is fundamental towards effective solutions. No single country has yet formulated the perfect response, but many are making progress in different aspects of managing the risks of wildfires. Together we can learn from each other.

3 A stronger multilateral response is needed: The UN system lacks robust wildfire expertise dedicated to this challenge as the management of wildfires is seen as mainly a national responsibility. This must change. Wildfires need to be placed in the same category of global humanitarian response as major earthquakes and floods. New capability and financial support should be made available to affected countries, with engagement from Civil Defense. Fires do not respect national borders, so a coordinated, agile, and anticipatory wildfire management mechanism is needed.

Regardless of mitigation, the authors say, "we must learn to live with fire," and indeed we must. We must learn to better manage and mitigate the risk of wildfires to human health and livelihoods, biodiversity, and the global climate. This report provides a roadmap for doing just that.

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Summary

Experiencing a wildfire at close proximity is a dangerous and terrifying experience. Uncontrollable and devastating wildfires are becoming an expected part of our seasonal calendars. Wildfires occur on every continent except Antarctica and most regions experience weather conditions conducive to the outbreak of a wildfire at some point in the year.

For the purposes of this report, "wildfire" is defined as "an unusual or extraordinary free-burning vegetation fire which may be started maliciously, accidently, or through natural means, that negatively influences social, economic, or environmental values". In contrast, the landscape fires that we are more accustomed to are an integral part of our world, critical to the healthy functioning of many ecosystems and an important cultural and land management tool. Whether caused by humans or nature, when fires burn out of control, they can become wildfires. {Section 1.1 of full report}

	Landscape fires	Wildfires
Frequency	Often seasonal; occur under moderate fire conditions; quite often intentionally lit	Linked to extreme fire weather
Intensity	Low to moderate intensity with short episodes of high intensity	Mostly high intensity with some periods of moderate intensity
Suppressibility	Easily controlled with regular firefighting resources	Control measures may exceed regular firefighting resources
Impact	Low impact, with a positive impact on some species	High impact on one or more values (social, economic, environmental)

The risk of wildfires is changing

The risk that wildfires pose to people and the environment is increasing due to numerous factors, including, but not limited to, climate change. A wildfire results from a complex interaction of biological, meteorological, physical, and social factors that influence the likelihood of a wildfire breaking of wildfires in many regions is also changing. Where wildfires previously occurred, risk may increase or decrease; in regions that previously did not experience wildfires, risk is increasing. {Recommendation 1}

Eliminating the risk of wildfires is not possible, but much can be done to manage and reduce risks. There are