8TH INTERNATIONAL WILDLAND FIRE CONFERENCE

Taming Wildfires in the Context of Climate Change

Key report findings

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THE GROWING THREAT OF EXTREME WILDFIRES

The frequency and severity of wildfires and the duration of the fire season on the rise globally

x2

In Australia, the average wildfire frequency has doubled since 1980

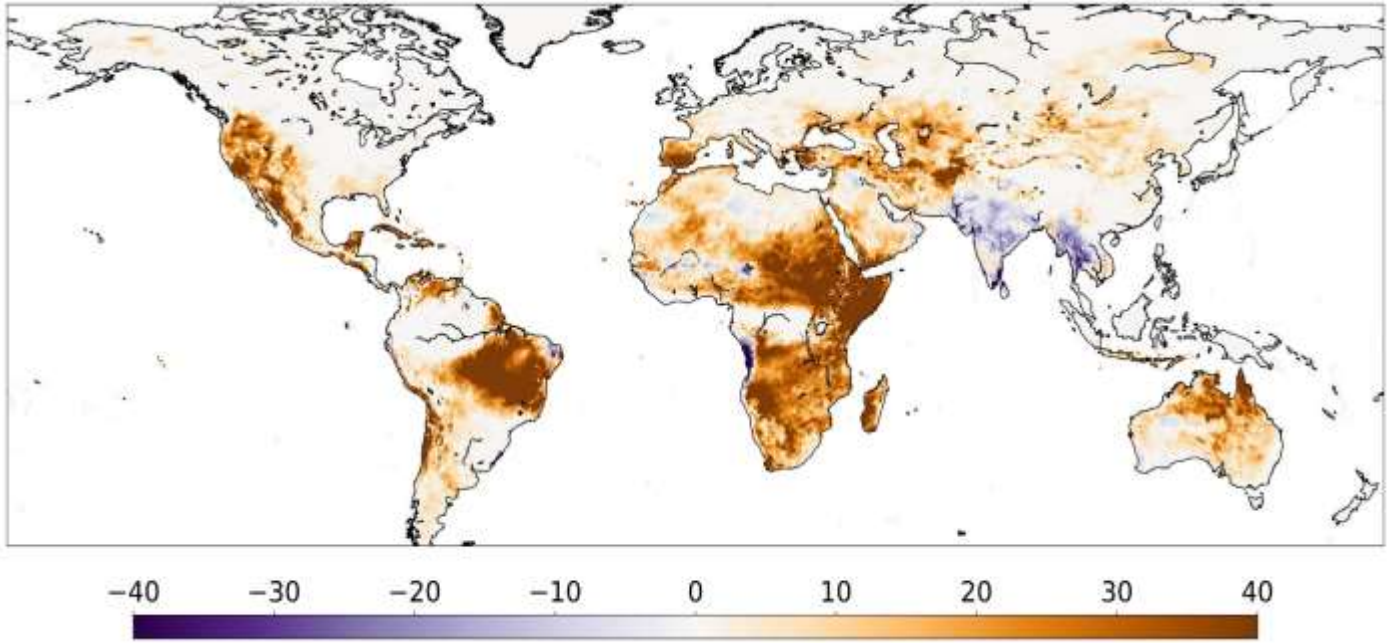
x8

In the forests of the western United States, wildfire severity increased eight-fold since 1985

+27%

Globally, the duration of the fire weather season has increased by 27% since 1979

Change in the number of fire weather days, 1979-2019



Source: Adapted from Jones et al., 2022.

THE HUMAN DRIVERS OF WILDFIRE RISK

Unsustainable land use practices and environmental degradation diminish the resilience of ecosystems to wildfires

- **Deforestation** and **peatland drainage** worsen drought conditions and increase landscape flammability
- **Rural land abandonment** increases fuel accumulation
- The **wildland-urban interface grew by 33% in the United States** (1990-2010): this exposes people and assets to wildfire risk
- Human activity is responsible for **70% of wildfire ignition**

THE CLIMATE DRIVERS OF WILDFIRE RISK

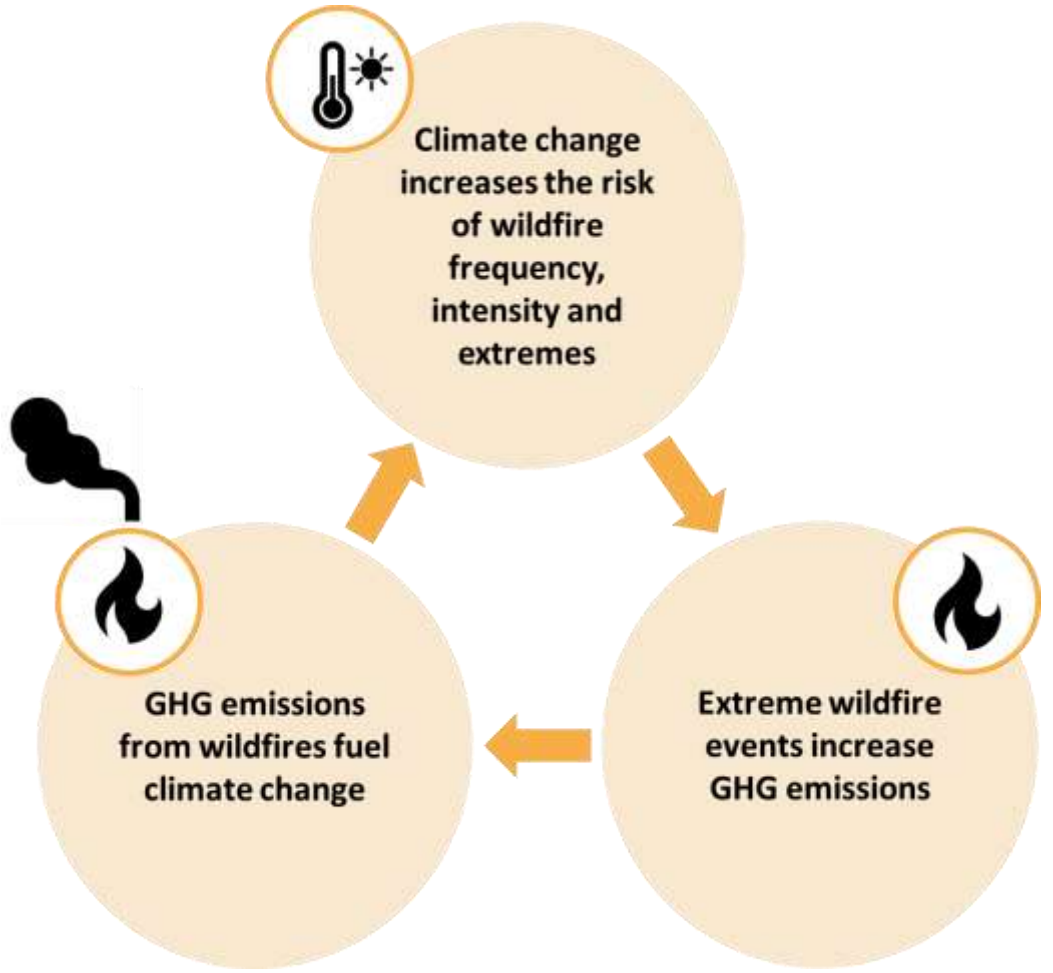
Climate change affects wildfire occurrence, intensity, and behaviour

- Higher atmospheric **temperatures**, changing **precipitation** and **wind patterns**, **heatwaves** and **drought** increase wildfire risk, affecting weather and fuel conditions and ignition patterns
- Climate change is estimated to have **doubled the total forest area burned** in the western USA (1984-2015)
- Due to climate change, the 2019-20 wildfires in Australia were estimated to be at least **30% more likely;** the extent of the 2017 extreme wildfires in Canada was **7-11 times higher**

EXTREME WILDFIRES' IMPACT ON CLIMATE CHANGE

Extreme wildfires affect climate change by emitting greenhouse gases and burning carbon sinks

- Under **normal conditions**, wildfires have **a limited net influence** on global carbon emissions
- Due to **extreme wildfires**, a **net transfer of CO_2** from vegetation and the soil to the atmosphere has been observed
- During the 2019-20 wildfires in Australia, **CO_2 emissions were 8x higher** than in the average wildfire season



THE IMPACTS OF EXTREME WILDFIRES

Extreme wildfires can cause significant impacts on the environment, people and the economy

- Biodiversity
- Soil, water and air quality
- GHG emissions

3 billion animals killed or displaced in Australia (2019-20)

- Long-term health problems
- Mortality
- Displacement

340 000 premature deaths every year due to wildfire smoke

- Asset loss and damage
- Economic disruption
- Wildfire management costs

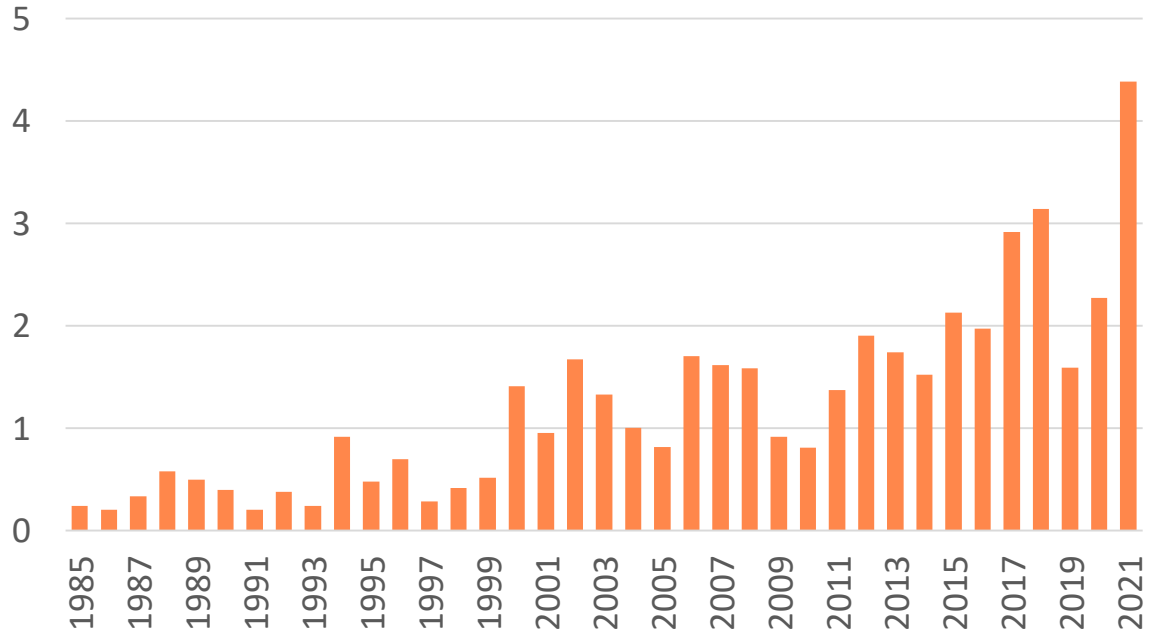
USD 19 billion in economic damages (2018 Camp Fire, USA)

THE NEED FOR BETTER WILDFIRE MANAGEMENT

Extreme wildfires led countries to scale up their emergency preparedness and response capacities

- Yet, extreme wildfires have **shown the limits of fire suppression** in containing wildfire damage
- A **paradigm shift** in wildfire management is needed, bringing the focus on prevention and adaptation

Federal wildfire suppression costs (billion USD) in the United States, 1985-2021



Source: Based on data from the National Interagency Fire Center.


POLICY
RECOMMENDATIONS
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1. PROTECT AND RESTORE WILDLAND ECOSYSTEMS

Healthy ecosystems are more resilient and less prone to wildfire risk and impacts

- **Protecting ecosystems** such as forests and peatlands from illegal activity and unsustainable land-use changes is critical for wildfire risk prevention
- **Restoring degraded ecosystems** (e.g. ensuring tree diversity, rewetting peatlands, controlling invasive species) and managing them sustainably can reduce landscape flammability
- Better **monitoring** and **enforcement** are needed

2. MANAGE FUEL IN THE WILDLAND-URBAN INTERFACE

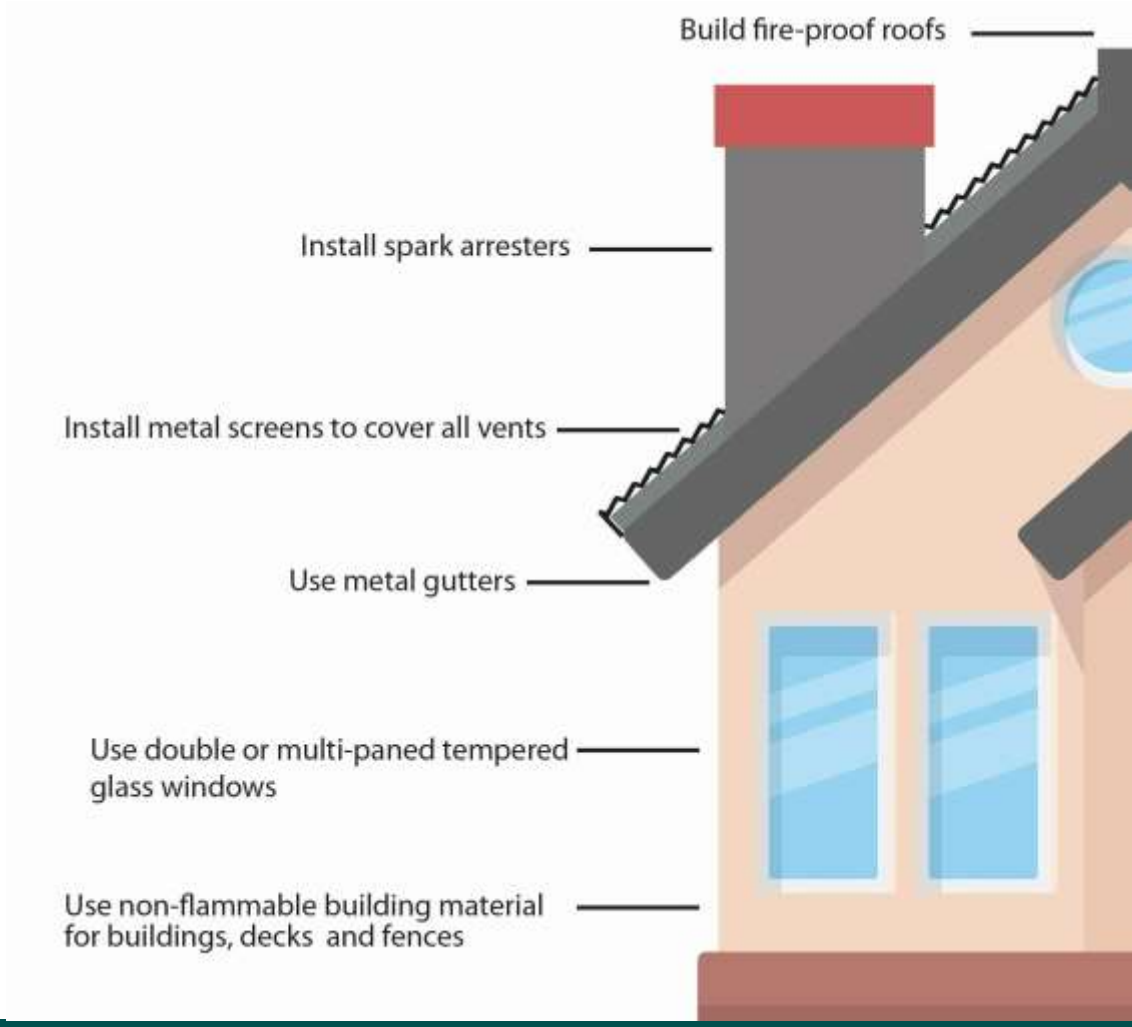
Fuel management contains wildfire risk by limiting the amount of vegetation available to burn

- **Prescribed and cultural fires** performed under safe conditions can reduce fuel loads
- **Buffer zones** around key assets are essential prevention measures in high-risk areas
- **Fuel breaks** can reduce fuel continuity and limit wildfire spread
- Engaging **private stakeholders** to encourage active land management and **monitoring compliance** are key to the success of these measures

3. ADAPT LAND-USE AND BUILDING REGULATIONS

Land-use and building regulations are essential to protect lives, livelihoods and assets

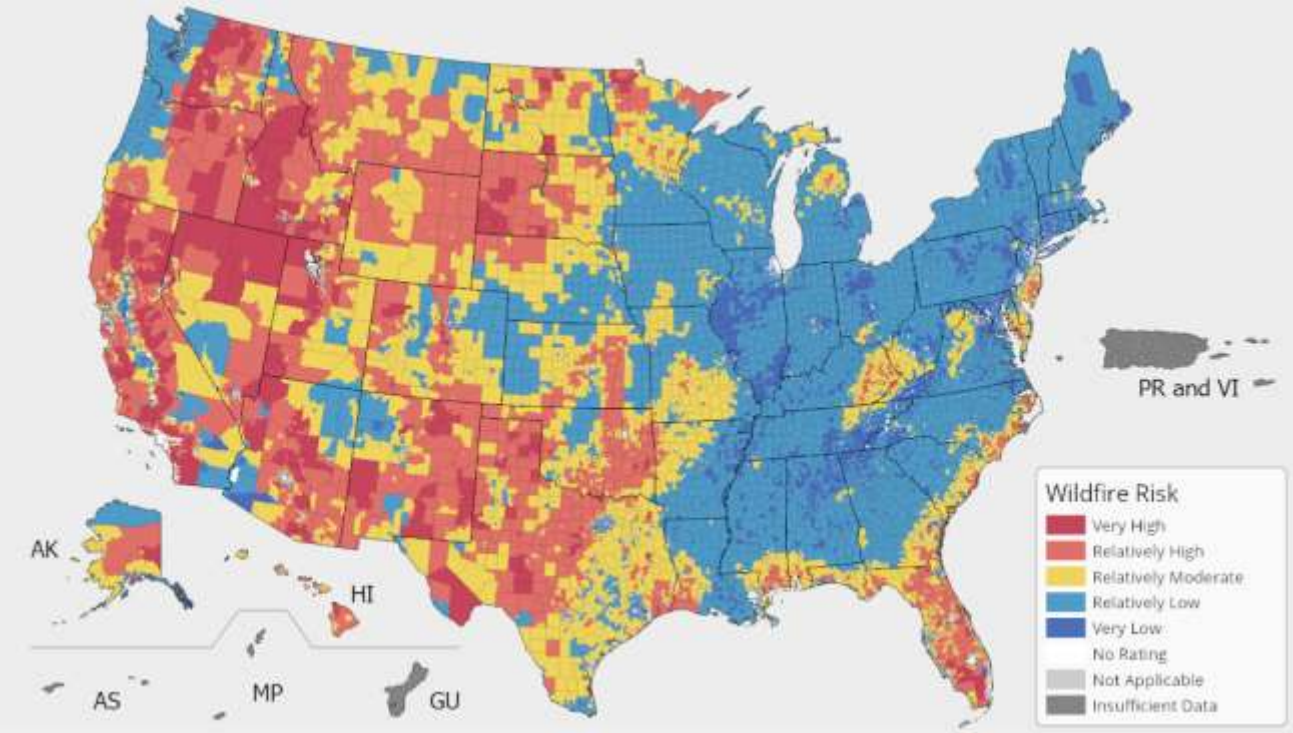
- **Land-use planning** can limit urban sprawl in the WUI and reduce human exposure to wildfires
- **Building codes** that mandate the use of non-flammable materials and structural protections for can minimise damages to physical assets
- **Adapted infrastructure** design, operation and management can strengthen resilience of whole communities and economies



4. IMPROVE WILDFIRE RISK ASSESSMENT

Wildfire risk assessment is the basis for all wildfire management decisions

Wildfire Risk Index in the United States



Source: FEMA.

- **Mapping** wildfire hazard, exposure and vulnerability is key to inform decision making - *e.g. wildfire risk maps in the USA*
- Integrating **climate projections** in wildfire models is indispensable to understand future risks
- **Participatory processes** can enhance the acceptance and ultimately the use of expert informed risk assessments

5. DEVELOP A WHOLE-OF-GOVERNMENT APPROACH

Coordination and collaboration across sectors and levels of government are essential

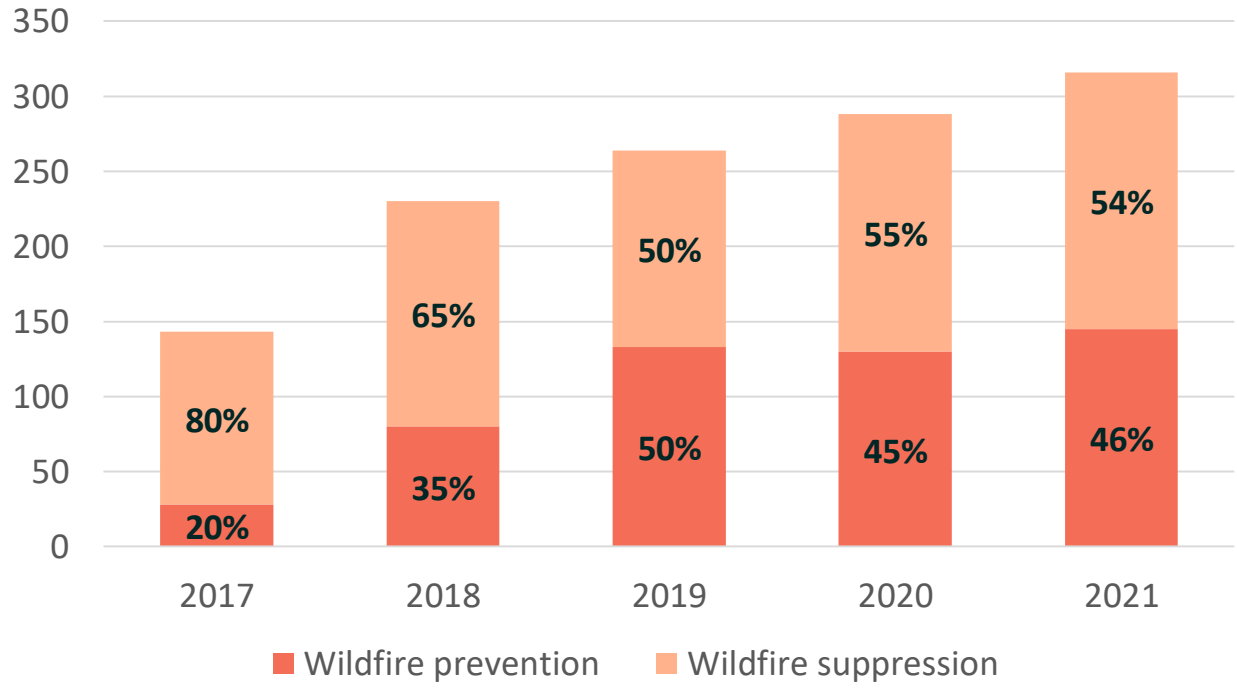
- **Central coordinating agencies** facilitate collaboration and exchange across sectors and levels of government
  e.g. Agency for Integrated Rural Fire Management (Portugal)
- National **wildfire management strategies** define clear roles and provide overarching policy framework
  e.g. National Cohesive Wildland Fire Management Strategy (USA)
- **Mainstream wildfire prevention** into sectoral policies to build synergies and ensure policy alignment
  e.g. Greece, Portugal, United States

6. SECURE APPROPRIATE FUNDING

Closing the gap between wildfire prevention and suppression funding is critical to strengthen long-term resilience

- Wildfire prevention budgets need to match those used for suppression - *e.g. Portugal*
- Sufficient and stable **public funding** for wildfire prevention must be ensured
- Incentives for **private investments** in wildfire prevention investments are key
- Securing affordable **insurance coverage** for wildfire risk in high-risk areas remains a challenge - *e.g. "Safer from Wildfires" programme in California, USA*

Growing prevention spending in Portugal, 2017-2021



Source: Based on AGIF, 2021.

CONCLUSION AND KEY RECOMMENDATIONS

Strengthen ecosystem protection and adaptive management for wildfire prevention

Scale up fuel management efforts to reduce fuel accumulation

Strengthen land use planning and building regulations for wildfire prevention

Harness knowledge for better wildfire management and improve wildfire risk assessments

Strengthen the policy and institutional framework

Scale up funding and risk transfer instruments for wildfire risk reduction

THANK YOU!

For more information

www.oe.cd/cc-wildfires

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Join the discussion!

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