



8th International Wildland Fire Conference

Global Wildland Fire Network – Statement of the Sub-Regional Euro-Alpine Wildland Fire Network

16 May 2023

Introductory remarks

The International Association of Wildland Fire has stated that “Climate change has already had significant consequences in the global wildfire reality, affecting citizens as well as the global wildland fire community.” They also emphasized that “There is already evidence of climate-driven fire regime change in the Northern Hemisphere with fire risk increasing in non-traditional fire-prone countries”. One of these regions are the European Alps. Wildfires are an emerging issue that can lead to high damages in protection forests, increasing natural hazards and resulting in threats for people and high costs up to millions of euros for fire suppression and required restoration measures. The recent extremely dry and hot summers in different parts of the Alpine space, e.g. 2013, 2015, 2017 and 2018, evidenced the need to be better prepared in order to face a changing fire regime with more intense and frequent fires.

Specific landscape fire problems of the region

The expected increasing intensity of drought periods and heat waves together with the increasing fire hazard resulting from rural abandonment and more recreational activities will probably increase forest fire activity in the European Alpine region in the near future. In the context of the European Alpine region, forest fires are defined as uncontrolled fires in forested area, independent of cause, size and fire type, including fires on clear-cuts, in young forest, coppice and vegetation at the alpine forest border. About 90% of forest fires in the European Alpine region are ignited directly or indirectly by humans or human actions. Main causes are cigarettes, fires getting out of control, flying sparks from trains or during work, arson, hot ashes and power lines. Around 10% of forest fires in the European Alps are caused by lightning strikes. Besides an ignition source, the moisture of the dead burnable material (fuel) is the essential part of fire ignition. Fire behavior, including propagation and intensity, depends on fuel moisture as well, but is also related to vegetation structure and continuity, topography and wind.

The mountain forests in the European Alps provide numerous ecosystem services to the population and have an important contribution to the protection function against natural hazards. Forest fires can lead to new avalanche-prone slopes, a higher risk of rockfall, mudslides, soil erosion and a local change of hydraulic regimes. Especially forests on steep, southern slopes are at risk, which play an important protective role against all kinds of natural hazards. Firefighting is generally difficult in the European Alps due to the rugged topography and low accessibility. Given a change in fire regime, it is likely that costs of firefighting, civil protection measures, post-fire restoration and necessary protective measures will strongly rise. The negative impacts of forest fires in the European Alps can be summarized as:

- Reduction of the protection function of mountain forests
- Increased vulnerability to natural hazards
- Loss of natural resources and decreased productivity through increased soil erosion
- High costs for firefighting and post-fire management
- Increased danger for humans and infrastructure at the wildland-urban-interface
- Increased air pollution and carbon release

Total direct costs for firefighting and post-fire management (excluding prevention measures) associated with forest fires in the European Alpine region are estimated to be currently around 75 Mio. Euro per year (Müller et al. 2020). Current efforts to manage forest fires in the European Alpine region are unable to prevent the occurrence of extreme forest fire events. The implementation of a foresighted and integrated forest fire management is highly needed and includes measures on fire prevention, fire suppression and post-fire management.



Main advances achieved since the last International Wildland Fire Conference: Action taken between the 7th and 8th Conferences

In the context of the EUSALP - EU Strategy for the Alpine Region, the Action Group 8 is aiming to improve risk management and adapting governance mechanisms by enhancing and valorizing existing cooperation structures. The identification of good practice solutions in tackling climate change is one of the major activities. In this context, the federal ministry of Sustainability and Tourism of Austria has launched the project “Forest fires in the Alps: State of knowledge and future challenges” in cooperation with the University of Natural Resources and Life Sciences, Vienna (BOKU), and the members of Action Group 8. A panel on forest fires experts was established, followed by the design and implementation of a multi-lingual online survey. Scientists, authorities and members of action forces of all EUSALP member states (Austria, Germany, Slovenia, Italy, France and Liechtenstein) contributed to the survey. Based on the results of the survey the processes, legal bases and major challenges in forest fire prevention, suppression and post-fire management in the Alpine region were identified. In June 2019, a forest fire workshop was held in Vienna in order to identify success stories on fire management and to discuss the major elements of a white paper focusing on integrated fire management. The white paper “Forest fires in the Alps: State of knowledge and future challenges” formulated a framework for an integrated fire including four major recommendations with several actions to put them into effect (Müller et al. 2020). They focus on the design and implementation of short- and long-term prevention measures, the adaption of suppression measures to the specific conditions of the Alpine region, improved understanding of measures for post-fire management as well as knowledge transfer and exchange of experiences.

Conclusions and recommendations

The experts of the Sub-Regional Euro-Alpine Wildland Fire Network propose a framework for an integrated fire management, which addresses the drivers of the current and future fire regime in mountain forests, considers the needs of humans living in the European Alpine region and aims to mitigate the negative impacts of fires. The framework includes the following recommendations and proposed actions to cope with the changing and intensifying future fire regime in the Alpine region. The costs for these integrated forest fire management measures are estimated to be around 10 Mio. € per year:

1. Recommendation: Design and implement short- and long-term prevention measures

- Compile dynamic fire risk maps on a local and national scale to identify current and future fire hotspots, as well as low fire intensity areas, to guarantee firefighters safety and tactical suppression actions
- Improve early warning systems considering the specific characteristics of topography and site conditions of the Alpine region
- Increase resistance and resilience of forests by promoting site adapted tree species
- Anticipate the effects of natural hazards by promoting fuel management
- Improve forest management planning by considering fire behavior and dynamics.
- Adapt forest management, including prescribed burning, and establish protection measures at the WUI
- Foster awareness-raising activities for stakeholders and the population to establish a “fire awareness culture”

2. Recommendation: Adapt suppression measures to the specific conditions of the Alpine region

- Improve the knowledge about and build an adequate forest infrastructure
- Promote the deployment of specialized action forces
- Adapt firefighting techniques and use technical (controlled) fires in suppressing strategies
- Ensure quick and efficient air support by helicopters



8TH
INTERNATIONAL
WILDLAND FIRE
CONFERENCE

GOVERNANCE PRINCIPLES:
Towards an International
Framework
www.wildfire2023.pt

Porto-Portugal
May 16-19th
2023

- 3. Recommendation: Improve the understanding and measures on post-fire management**
 - Restore forest cover using technical measures and improve post-fire ecological-based restoration activities
 - Minimize risks of fire effects and natural hazards
 - Investigate studies on fuel modeling and fire behavior
 - Establish continuous monitoring and case studies on burnt sites to monitor mortality and regeneration
 - Estimated direct costs for these measures per year and for the whole Alpine region: 1 - 2 Mio. €

- 4. Recommendation: Support knowledge transfer and exchange of experiences**
 - Establish a multi-stakeholder approach among authorities, action forces and scientists
 - Conduct transnational trainings and specific forest fire scenarios for fire brigades and action forces
 - Continue with collaboration in forest fire research in the Alpine countries
 - Address negative effects of rural abandonment and recreational activities
 - Organize international workshops
 - Use joint terminology