

Global Wildland Fire Network



Sub-Regional Euro-Alpine Wildland Fire Network

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Retrospective 2019-2023

- Key challenges
- Network activities
- Progress in Integrated Fire Management
- Institutional capacity building and policy development





Key challenges

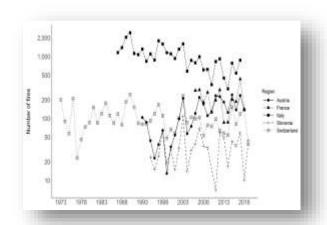
- mountain forests in the Alps provide many ecosystem services and have an important contribution to protection function against natural hazards
- intensity of drought periods, heat waves and fire hazard resulting from rural abandonment and recreational activities increases wildfires in the Alpine region
- Forest fires lead to loss of natural resources, decreased productivity, soil erosion, higher risk of rockfall, avalanche-prone slopes and mudslides
- Further reduction of the protection function of mountain forests due to increased vulnerability to natural hazards
- Firefighting generally difficult in the Alps due to the rugged topography and low accessibility
- costs of firefighting, civil protection measures, post-fire restoration and necessary protective measures will strongly
- Increased danger for humans and infrastructure at wildland-urban-interface

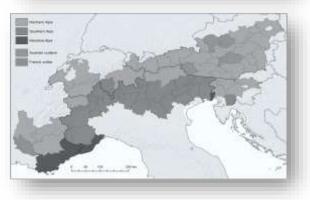




Network activities

- Updating database on fire records in European Alpine Region for joint publications (Conedera et al. (2018); Bekar et al. (2020); Moris et al. (2023)
- exchange between research groups in Switzerland, Germany, Austria, Slovenia and Italy for joint application for funding (H2020, Interreg CE)
- White Paper for policy makers "FOREST FIRES IN THE ALPS -State of knowledge, future challenges and options for an integrated fire management" (Müller et al. 2020)









Collection of Data, Survey and Workshop about forest fires in the Alps



Identification of the main challenges



White paper for possible options for an integrated fire management



Joint survey about prevention, suppression and policy measures

Future challenges of forest fire fighting

Infrastructure in the forest (e.g. cell towers)

Insufficient number of action forces

Not enough or inadequate vehicles

Difficulties in sparsely populated regions to maintain operational capability

Inadequate equipment-

Inadequate training of action forces

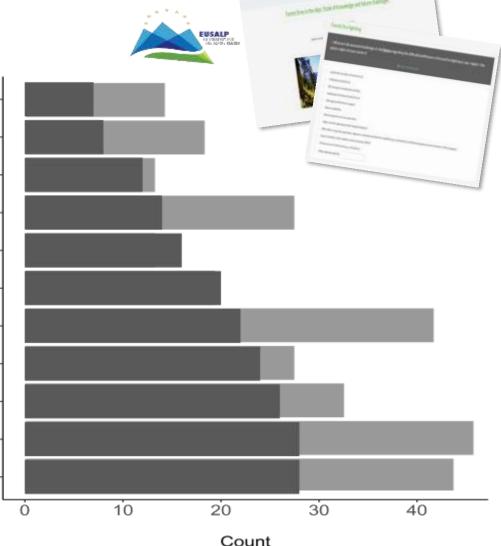
Several large fires at the same time

Area of conflict at the wildland-urban-interface (WUI)

Missing/insufficient air support-

Water availability

High costs through large and/or long lasting fires



Additional challenges:

- Inaccessibility
- Poor coordination/communication
- Forest road condition (in winter)
- Adaptation to changing fire regime
- Insufficient funds
- Non-professional action forces
- Lack of experience
- Topography
- Missing training at all levels
- Management of large fires
- Inadequate air strikes / night flight prohibitions
- Staff management
- Fire intensity
- Lack of equipment maintenance

Importance at present
Importance in approx. 10 years



White paper: Integrated fire management for the Alpine region



Müller, MM; Vilà-Vilardell, L; Vacik, H (2020): Forest fires in the Alps – State of knowledge, future challenges and options for an integrated fire management.. EUSALP Action Group 8, 83

Drivers Climate change Socioeconomic changes New policies

Changed precipitation pattern

Suppression measures

- Knowledge on forest infrastructure

- Promote deployment of specialized action forces

Adapted firefighting techniques
 Quick and efficient air support

- Use of technical fires

- Longer drought periods
- More heatwaves
- Dry lightning strikes

- Increased recreational activities
- Extensive use of natural resources
- Rural abandonment
- Traditional fires

- Maintain biodiversity
- Renewable energy
- Sustainable development
 - Open forests to new users

FOREST FIRES

Impacts

Destruction of protection forests | Natural hazards | Loss of natural resources | Soil erosion | High costs for firefighting and post-fire measures | Endangered Wildland-Urban-Interface | Air pollution and carbon release

Elements of integrated fire management

Prevention measures

- Improve early warning systems
- Increase resistance and resilience of forests
 - Anticipate effects of natural hazards
- Improve forest fire management planning
 - Foster awareness-raising

Post-fire management

- Restore the forest cover
- Minimize risks of fire effects and natural hazards
 - Continuous monitoring of burnt sites
 - Investigate fire behavior
 - Establish case studies

Knowledge transfer and exchange

Establish a multi-stakeholder approach | Transnational trainings of fire brigades and action forces | | Continue forest fire research | International workshops | Address negative effects of rural abandonment | Joint terminology



Recommendations for Institutional capacity building and policy development

- **Design and implement short- and long-term prevention measures** (e.g. early warning systems promoting site adapted tree species, fuel management and prescribed burning, fire awareness culture
- Adapt suppression measures to specific conditions of Alpine region (e.g. quick and efficient air support by helicopters, deployment of specialized action forces)
- Improve understanding and measures on post-fire management (e.g. continuous monitoring and case studies, restoration of forest cover using technical measures)

• Support knowledge transfer and exchange of experiences (e.g. transnational trainings joint

