FIREURISK - DEVELOPING A HOLISTIC, RISK-WISE STRATEGY FOR EUROPEAN WILDFIRE MANAGEMENT

Rapports

Informations projet

FirEUrisk

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Site Web du projet

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Periodic Reporting for period 2 - FirEUrisk (FIREURISK - DEVELOPING A HOLISTIC, RISK-WISE STRATEGY FOR EUROPEAN WILDFIRE MANAGEMENT)

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Résumé du contexte et des objectifs généraux du projet

Forest fires are an increasing threat that affects almost a third of the global landmass. Fires are now occurring in new areas, but they are becoming more severe, sometimes extreme, and more frequent in locations where fires have already occurred for many years. The FirEUrisk project was designed to improve the protection of citizens exposed to wildfires, namely extreme forest fires, that endanger populations, their assets, and the environment.
FirEUrisk aims to develop a science-based and risk-wise strategy, which integrates practices and policies of forest fire prevention, suppression, and adaptation in a holistic conceptual framework. FirEUrisk project will also deliver innovative risk-informed regional planning approaches that effectively increase local communities' resilience, improving their safety and overall welfare while mitigating the consequences of wildfires. The project aims to develop methods in demo areas across 17 countries participating in the project. These innovative solutions will be showcased in five Pilot Sites (PS), covering different fire conditions (3 in the Mediterranean, 1 in Central, and 1 in Northern Europe), plus the European Territory (ET).
Entering the last year of activity, FirEUrisk has proposed an integrated fire risk assessment strategy, which builds-upon relevant variables and components that are used to calculate fire risk. Besides, several products were already developed and disseminated through scientific publications and other channels, namely the FirEUrisk website (Dissecting risk to prevent extreme wildfires - FirEUrisk).

Travail effectué depuis le début du projet jusqu'à la fin de la période considérée dans le rapport et principaux résultats atteints jusqu'à présent

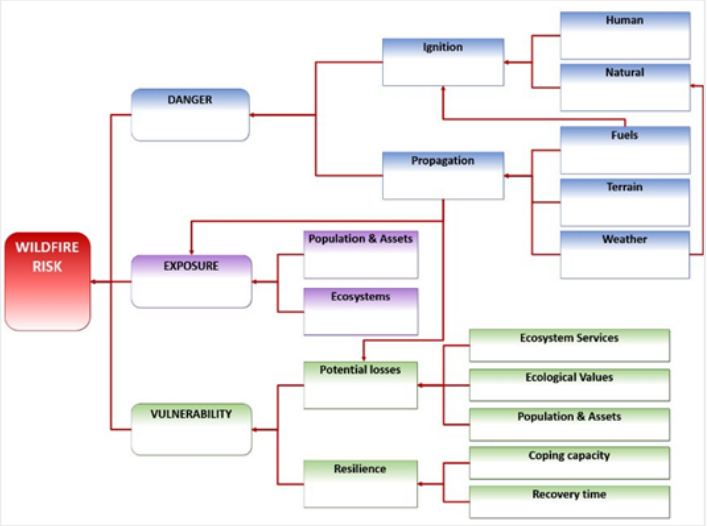
WP1 is focused on the assessment of current fire risk conditions. Several products were developed and showcased in PSs, including: a mobile application to help citizens to improve awareness of fire risk conditions and recall their help in characterizing ground fuels and fire outbreaks; ET and PS fuel maps; mapping for the ET of the ecosystem services and values, fire line intensity and live fuel moisture content.
WP2 is exploring risk reduction strategies, mainly to deal with extreme fires. Reduction of ignitions caused by human factors through improving citizen awareness and education towards fire and analysing the impacts of prescribed burning on fuel flammability are being developed. Mapping for the ET of the suitable areas for the adoption of each land-management strategy as well as processes associated to extreme fire behaviour and guidelines to improve the training of firefighters in the management of large fires were produced. Large fires in 2021 and 2022 (in press) were also reported in collaboration with the Joint Research Centre.
WP3 focussed on producing the future climate scenarios, i.e. the climate variables, their temporal resolution and the prioritization of the climate models to span them across the spread of the future fire weather index. The future fire situation in EU was addressed and respective ET maps were created based on key scenarios.
WP4 involves the conceptual integration of the project outcomes and includes managing the FirEUrisk Observatory, a group formed of European experts and managers that provide advice for the project development. The conceptual integration of the project was completed for the risk assessment activities, which is the backbone of FirEUrisk project, being critical for the overall fire risk assessment

framework and complementary developments. In addition, FirEUrisk is promoting an open platform to share data and products as well as a display viewer that will facilitate its use by end-users. Lastly, a Roadmap for an integrated fire risk management strategy for Europe is being developed.
In WP5, several demonstration events were held in Spain, Portugal, Central Europe and Sweden. These events were an opportunity to co-develop FirEUrisk solutions together with interested end-users. The next demonstration events will be held on the Greek PS and on the ET territory.
In WP6, eight webinars were held with relevant topics: fire risk, reduction strategies, data management, future fire regimes and biodiversity, and past fires. In addition, courses on fuel type mapping were organized in January 2023. Communication activities included a wide range of actions and tools: logo, templates, booklets, web page, infographics, etc., a motion graphic animation, social media: the X account, Linkedin, and press activities.
Policy Brief documents - “Advancing wildfire management in a climate change context: A call for Integration of Holistic Ecosystem and Landscape Management Frameworks in EU Policies” and “Policy Brief on shifting to a holistic approach in national wildfire management country: Italy”.
Collaboration with Firelogue is being carried out - #EUFireProjectsUnited.

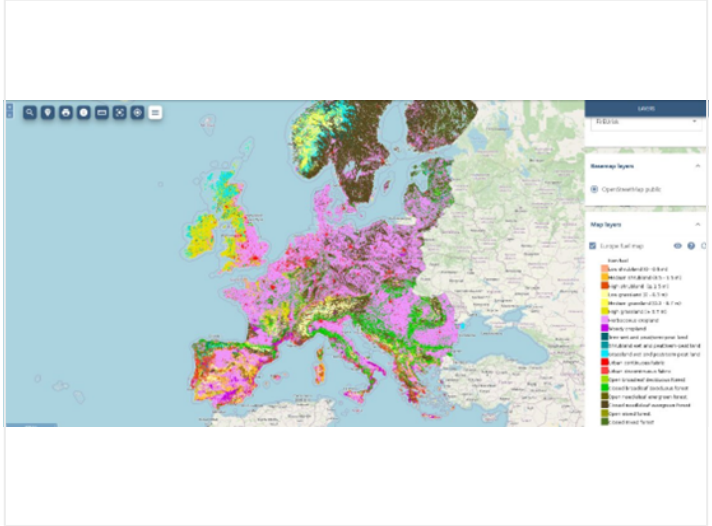
Progrès au-delà de l’état des connaissances et impact potentiel prévu (y compris l’impact socio-économique et les conséquences sociétales plus larges du projet jusqu’à présent)

So far, the FirEUrisk published 31 scientific papers. Furthermore, many products and datasets were developed, including:
· A hierarchical, scale-independent and multipurpose fuel classification system. Generation of a fuel map of the ET at 1 km2 (https://doi.org/10.5194/essd-2022-184). This product and those derived from the PS at 1 ha resolution used this classification.
· A fire ignition probability model at ET and PS scales, based on human and biophysical variables. Numerous datasets of explanatory factors were obtained from available sources.
· An in-depth review of land use management strategies to reduce fire risk was performed and their application throughout the ET in present and future conditions will be assessed as a next step.
· A contribution to understand better the dynamic evolution of wildfires, namely some very large fires, as an oscillatory and intermittent process was made .
· A comprehensive characterization of extreme fires occurring in different European countries aiming to formalize mega-fires analysis. Data and information were collected from areas/countries that faced extreme fires in the summer of 2021 and 2022 (in press) in detailed reports.
· An improved proposal for an integrated fire risk scheme in Europe, built on previous works, based on the main components of FirEUrisk and of testing them in dedicated PS (https://doi.org/10.3390/fire6050215).
· A conceptual framework for the integrated management of wildfires, considering the work done by several institutions in Europe and elsewhere is being prepared and will be proposed.
· An assessment of the European fire regimes (https://doi.org/10.1111/geb.13569) and of the ecological effects of the intensification of fire regimes has been performed (https://doi.org/10.1111/geb.13858).
Fire risk reduction will positively promote cost-effective bio-economies and nature-based solutions.

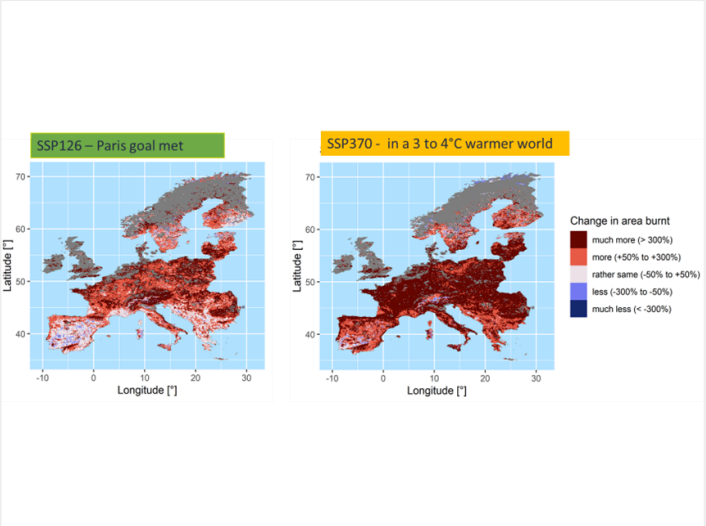
Overall, mitigating the devastating effects of extreme forest fires will improve safety and resilience in rural areas.



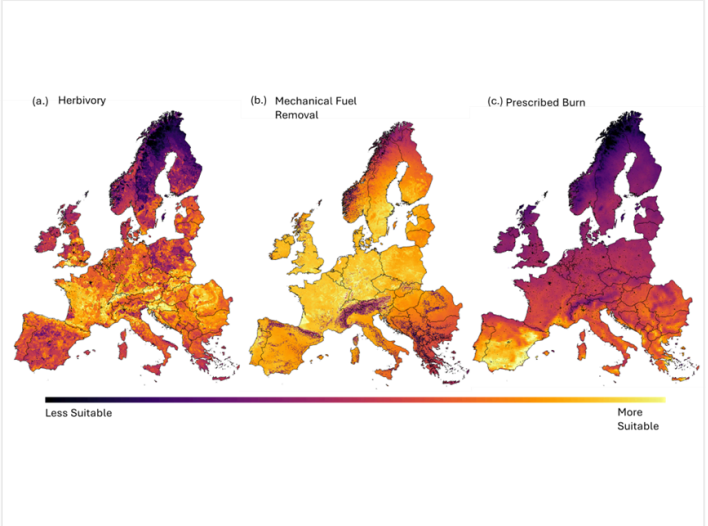
FirEUrisk - Integrated approach to wildfire risk assessment.



FirEUrisk - Display viewer.



FirEUrisk - Future fire situation in EU - Relative change in area burnt (2000–2030 to 2070–2100)



FirEUrisk - Estimated range of suitable areas for the adoption of each land-management strategies.

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Permalink: https://cordis.europa.eu/project/id/101003890/reporting/fr