

FirEUrisk Project

Developing a Holistic Risk-wise Strategy for
Wildfire Management

Domingos Xavier Viegas
ADAI/UC, Portugal

WFRM Clustering Event – Brussels, Belgium

22nd November 2023



This project has been granted funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement no. 10 1003890

Objectives



- Develop, test and disseminate an **Integrated a Science-Based Strategy** for wildfire risk management in Europe.
- Expand on the existing **WFR assessment** methods, going beyond the concept of danger.
- Drive WFR management to **reduce current risk** conditions.
- **Adapt fire management** strategies to expected socioeconomic and climatic changes.
- In close collaboration between researchers, practitioners, policymakers and citizens.



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Our Partners

Australia:



Canada:

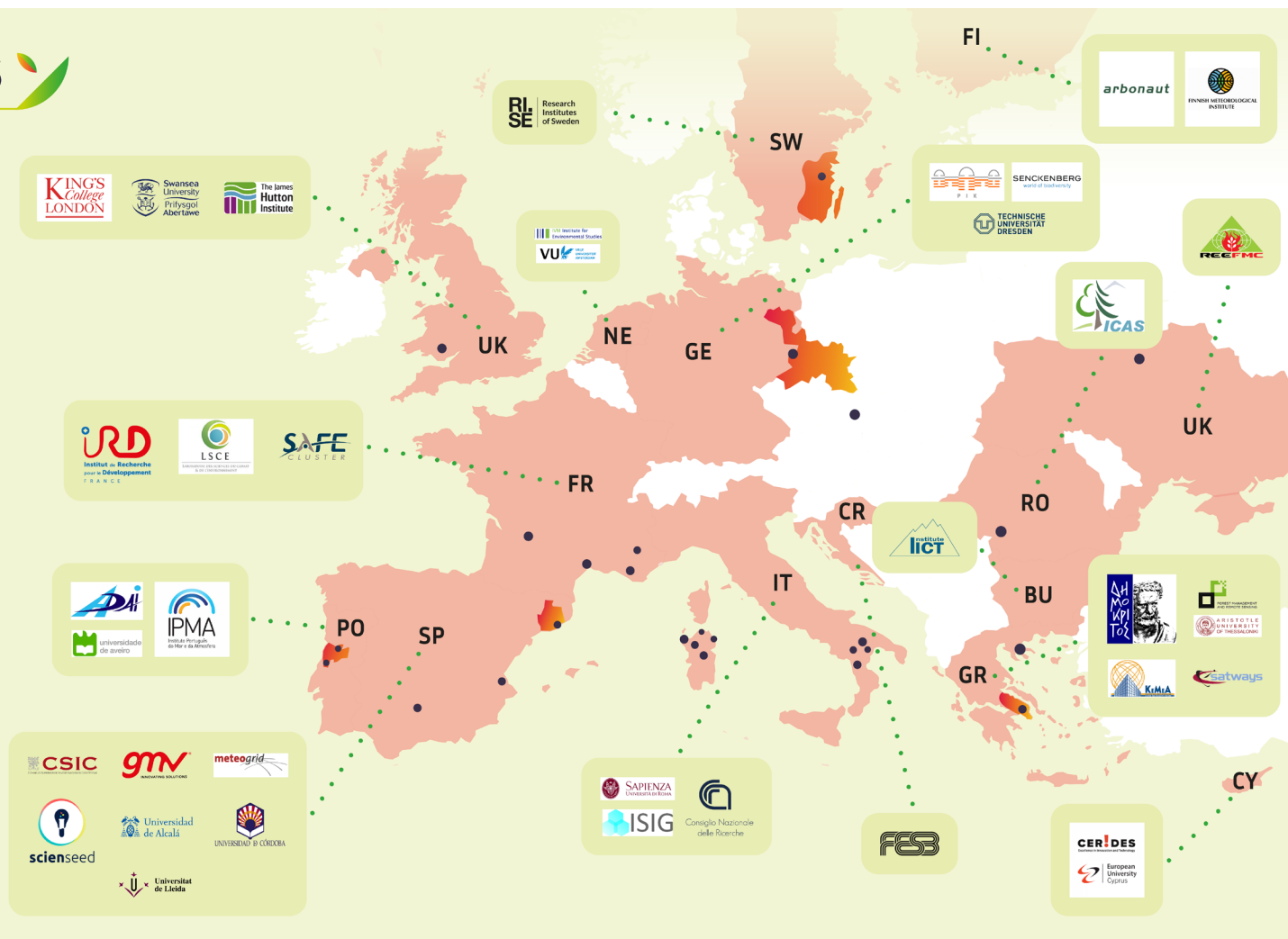


Israel:



● Demonstration Areas

■ Pilot Sites



April 2021 to April 2025



- 38 partners.
- 18 countries
- 21 research institutions
- 12 Operational agencies
- 5 Enterprises
- Interdisciplinary:
 - Mechanical engineers.
 - Forest engineers.
 - Social scientists
 - Ecologists / env. scientists.
 - Geographers.
 - Climatologists



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Risk Assessment and Reduction



- Analyze wildfire risk in all its components (Danger, Exposure and Vulnerability), in all its phases and scales.
- Include socioeconomical aspects and involve the population in fire management science.
- Focus on the management of WUI areas and the very large fires.
- Test different methods to reduce the risk and capitalize from previous experiences.
- Improve training preparedness of all stakeholders, including citizens.



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Risk Adaptation and Integration



- Elaborate **fire regime scenarios** linked to changes of risk-drivers due to future climate conditions.
- Support adaptation plans in **new fire-prone regions** (higher altitude and northern areas).
- **Integrate** results with existing systems, platforms and networks.
- **Network** with the international wildfire research community.



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Steering Committee



- General Coordinator
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- Technical Coordinator
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- Scientific Coordinator
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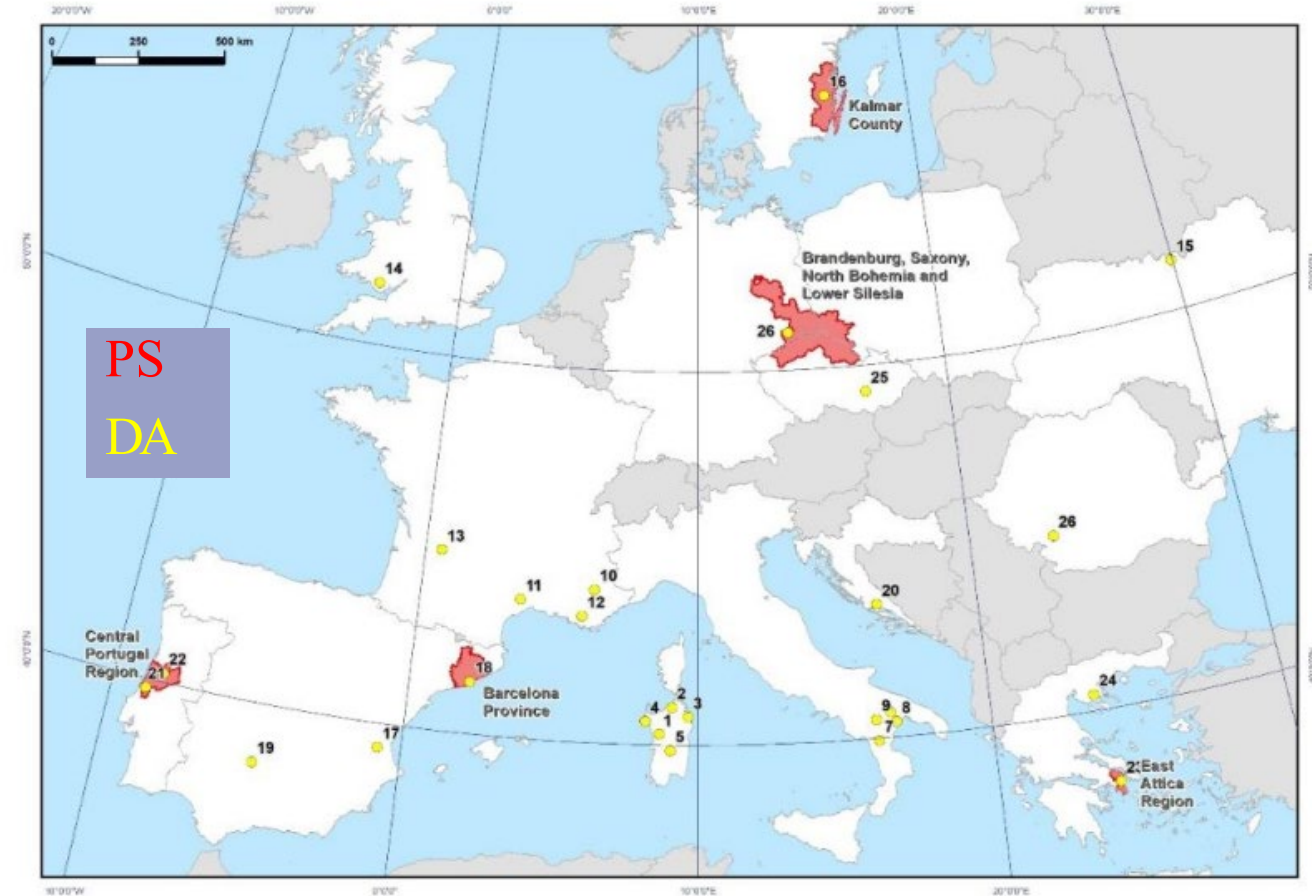
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Demonstration plan



- 26 Demonstration Areas (DA) (NUT-3)
 - Field data collection campaigns for modelling and testing purposes
- 5 Pilot Sites (PS)
 - Portugal, Spain, Greece, Germany, Sweden (field tests)
- EU scale
 - Projection of fire regime and wildfire risk for 2050 and 2100



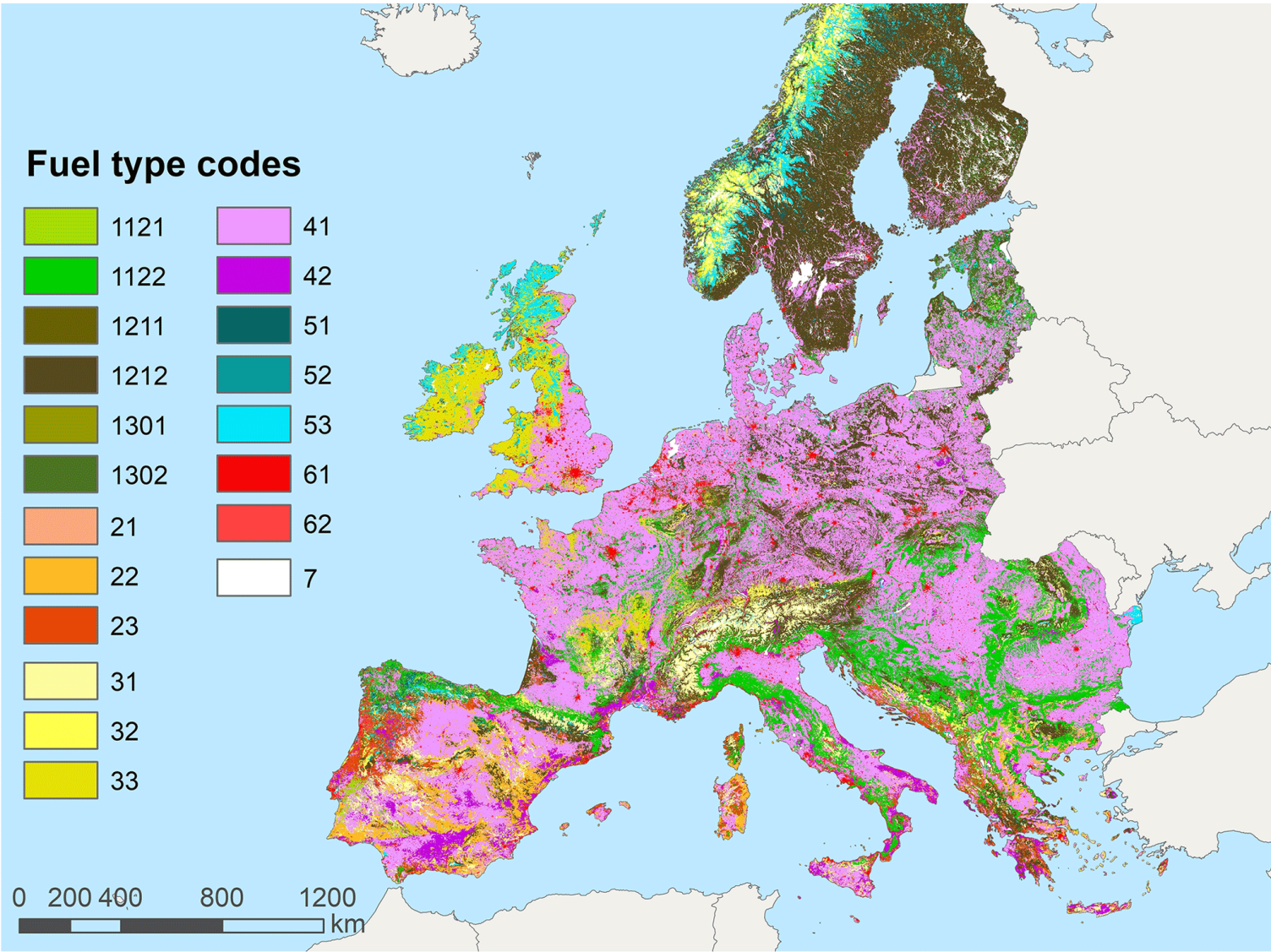
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Fuel classification map

Aragoneses, E., García, M., Salis, M., Ribeiro, L. M., and Chuvieco, E.: Classification and mapping of European fuels using a hierarchical, multipurpose fuel classification system, Earth Syst. Sci. Data, 15, 1287 –1315, <https://doi.org/10.5194/essd-15-1287-2023>, 2023.

1. Forest	11. Broadleaved	<u>112. Deciduous</u>	1121. Open (15-70%)
			1122. Close (>70%)
	12. Needleleaved	<u>121. Evergreen</u>	1211. Open (15-70%)
2. Shrubland	21. Low (0-0.5m)		
	22. Medium (0.5-1.5m)		
	23. High (>1.5m)		
3. Grassland	21. Low (0-0.5m)		
	22. Medium (0.5-1.5m)		
	23. High (>1.5m)		
4. Cropland	41. Herbaceous		
	42. Woody (shrub-tree)		
5. Wet, peat and semi-peat land	51. Tree		
	52. Shrubland		
	53. Grassland		
6. Urban	61. Continuous urban fabric (80-100%)		
	62. Discontinuous urban fabric (15-80%)		



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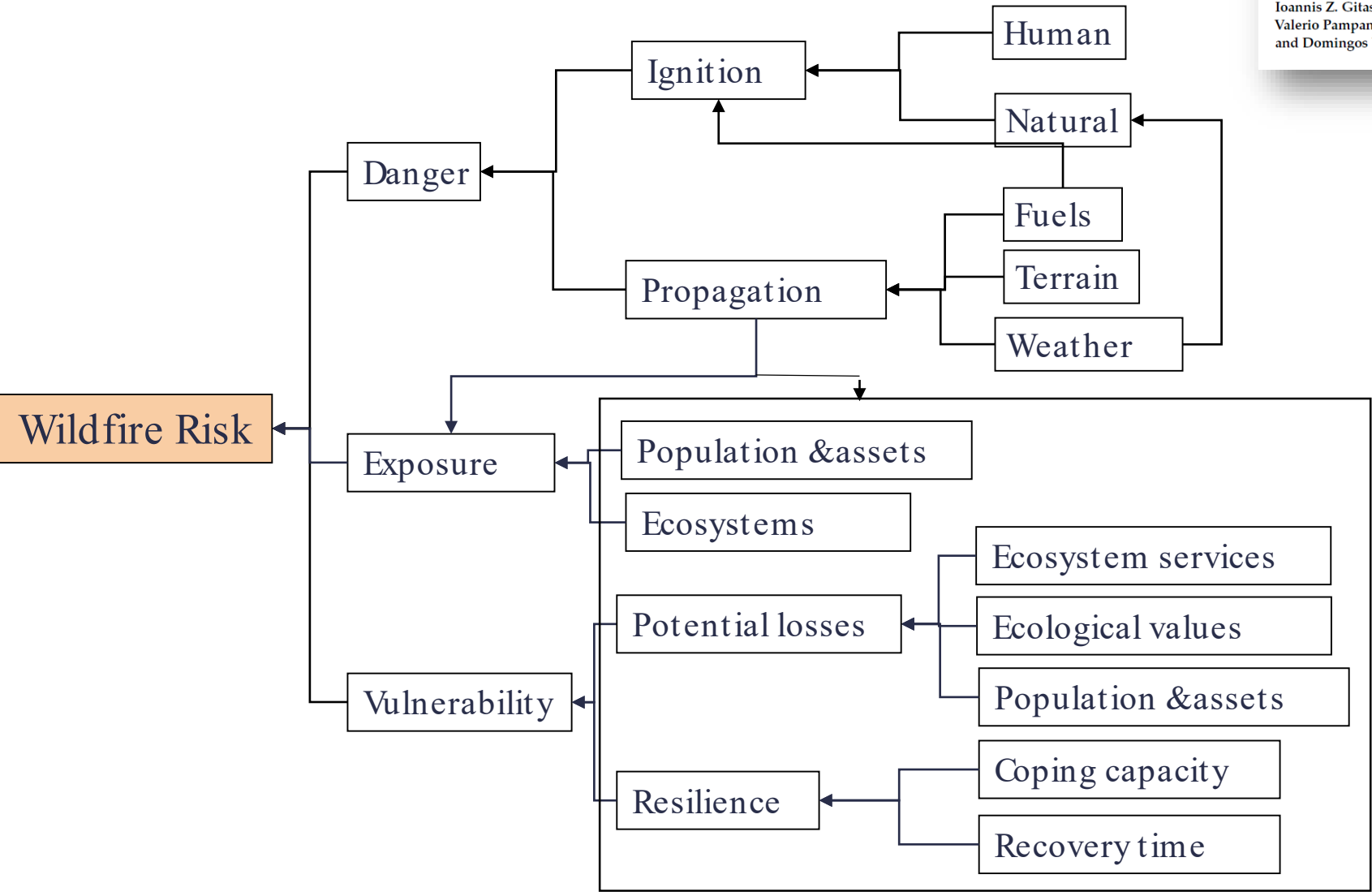
FirEURisk Risk Assessment Proposal



Concept Paper

Towards an Integrated Approach to Wildfire Risk Assessment: When, Where, What and How May the Landscapes Burn

Emilio Chuvieco ^{1,*}, Marta Yebra ^{2,3}, Simone Martino ⁴, Kirsten Thonicke ⁵, Marta Gómez-Giménez ⁶, Jesus San-Miguel ⁷, Duarte Oom ⁷, Ramona Velea ⁸, Florent Mouillot ⁹, Juan R. Molina ¹⁰, Ana I. Miranda ¹¹, Diogo Lopes ¹¹, Michele Salis ¹², Marin Bugaric ¹³, Mikhail Sofiev ¹⁴, Evgeny Kadantsev ¹⁴, Ioannis Z. Gitas ¹⁵, Dimitris Stavrakoudis ¹⁵, George Eftychidis ¹⁵, Avi Bar-Massada ¹⁶, Alex Neidermeier ¹⁷, Valerio Pampanoni ¹⁸, M. Lucrecia Pettinari ¹, Fatima Arroigante-Funes ¹, Clara Ochoa ¹, Bruno Moreira ¹⁹ and Domingos Viegas ²⁰





JRC TECHNICAL REPORT

Analysis of 2021 critical wildfire events in the Mediterranean region

Analysis of 2021 critical wildfire events in the Mediterranean region

Almeida, M., Ribeiro, L., Alves, D., Viegas, D., Vaz Pinto, V., Marques, R., Gomes, A., Ballereau, D., Lahaye, S., Romain, M., Sallis, M., Arce, B., Bacchi, V., Caru, A., Del Giudice, L., Efthychidis, G., Varela, V., Gkotsis, I., Petrou, K., Boustras, G., Senekis, I., Kirschner, J., Pandey, P., San-Miguel-Ayaz, J., Durrant, T., Liberta, G., Boce, R., Maleniti, P., Branco, A., Jacomé Félix Oom, D., De Rigo, D., Roglia, E., Sclanti, N., Suarez-Moreno, M.

2023

Joint
Research
Centre

EUR 31638 EN

European Union's
under the Grant



- Report on the fires of 2021 published by JRC.
- The report on the fires of 2022 is ready and that of 2023 is in preparation.

Abstract

This report presents an overview of the 2021 wildfire season in the Mediterranean region on the basis of the data that are available in the European Forest Fire Information System (EFFIS¹), which is complemented with a specific analysis of some of the most damaging fires during this campaign, performed by the FirEURisk² project. For the analysis of these fires, information on the pre-fire conditions is provided to determine wildfire danger at the time of ignition. Furthermore, evolution and damage of each of the fires is described with as much detail as possible, looking into the possibility of learning from the experience gathered from these fires for the management of future critical wildfire events. It is foreseen that this report is repeated for the forthcoming fire seasons as a collaboration between the FirEURisk project and the EFFIS team at the Joint Research Centre.