



MOUNTAIN

WILD FOR WILDFIRES

Creating resilience against wildfires

How do you stop a wildfire?

This question has driven fire research for a long time, but Avi Bar-Massada, Senior Lecturer in Biology and Environment at the University of Haifa at Oranim, is part of a 10 million euro EU research consortium, “firEURisk,” that’s asking broader questions. “One of the worst consequences of climate change is the increase, worldwide, in the frequency of fires,” says Dr. Bar-Massada, “so suppression is not enough. With more extreme conditions, such as longer periods of drought, the prediction is that things will worsen throughout Europe.”

“firEURisk,” which began last year, is a large Horizon 2020 project comprised of 38 partners from 18 countries focused on three goals: 1- better assessing the risk of wildfires in Europe; 2- reducing the risk of wildfire across Europe; 3- promoting societal adaptations to

wildfire and improving preparedness and prevention of fire.

Dr. Bar-Massada plays both management and scientific roles in “firEURisk.” As manager, he leads 20 partners in the subgoal of “Exposure & Vulnerability.” As scientist, he is creating maps of the Wildlife Urban Interface (“WUI”)— those areas where human settlements are exposed to wildfire risk—for all of Europe. WUI is Bar-Massada’s specialty. “It’s difficult to determine all the variables and to understand all the processes that can cause a fire,” he says. “You first have to define where settlements interact with vegetation. Which vegetation will catch fire and be ‘fuel’? How far must a house be from a forest to be at risk? And on and on.” Bar-Massada has developed methods for identifying WUI areas, utilizing geographic information systems (GIS) and

satellite data. “GIS,” he says, “allows you to combine different kinds of spatial layers, such as data of settlements with maps of vegetation. How to combine the data sets is an art, as it requires thorough understanding of the process of wildfire spread across landscapes.” In addition, Bar-Massada, working with a Spanish partner, uses statistical tools to develop ignition models, which are able to determine where and why wildfires will start. The WUI maps, and the results of the ignition models, are then handed over to a different group of scientists, who combine them with computer models of wildfire spread. “They run thousands of simulated fires, each in slightly different locations. The computer creates a map of where the fires will likely spread.”



Dr. Avi Bar-Massada

is a landscape ecologist at the Department of Biology and Environment at University of Haifa at Oranim, where he heads the Spatial Ecology Lab.



Project partners, end users and collaborating wildfire-related initiatives gather for the annual hybrid annual plenary meeting, 2022.



Members of firEURisk

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firEURisk is really multiple projects,” says Bar Massada. “Scientists, first responders, social scientists, insurance companies, policy makers, community representatives, and private citizens work on the goals. It’s a very integrative approach.

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PARTNERS

Academia & Research Centers, Public Authorities, Companies and First Responders



YEARS

(2021–2025)



MILLION EUROS

in funding



COUNTRIES

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