

objective

Guide Preventive Fire Management options to

analyze wildfire exposure under an **extreme** weather scenario and assess the impact of fuel treatments on fire hazard

how

Fire spread simulations of large wildfires (MTT algorithm) (Fireline intensity; Burn probability; Fire size):

- 100m gridded datasets
- Historical and Extreme (P95) weather scenarios
- Different fuel treatment levels

Landscape connectivity (graph theory):

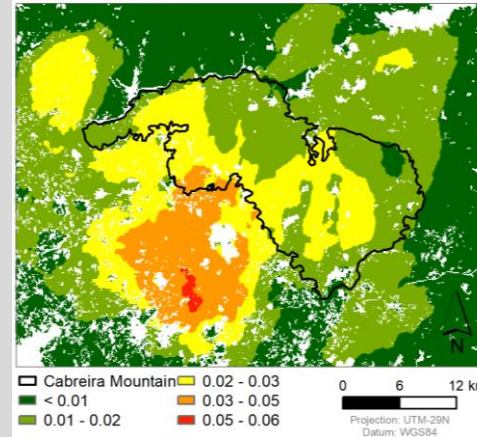
Metric that integrates Fireline intensity and wind direction

Supporting prescribed fire management decisions in the Cabreira Mountain, Portugal

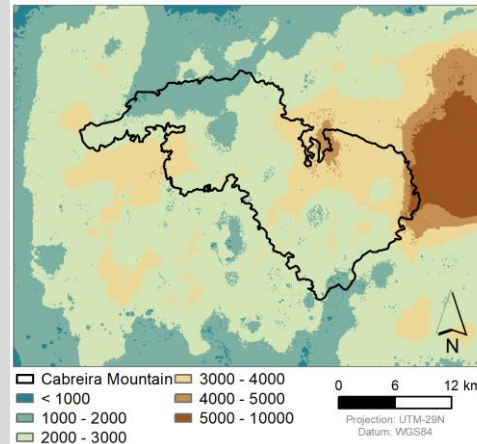
30.04.2021

Extreme scenario (P95)

Burn Probability (P95)

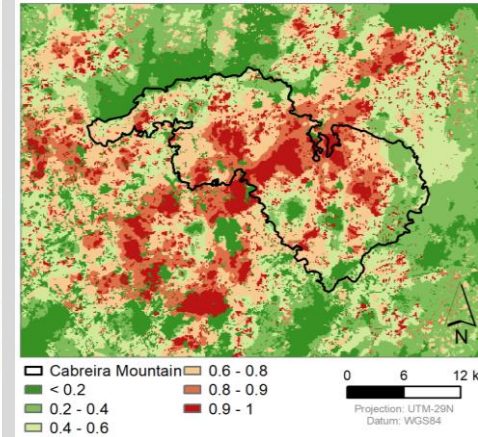


Fire Size ha (P95)

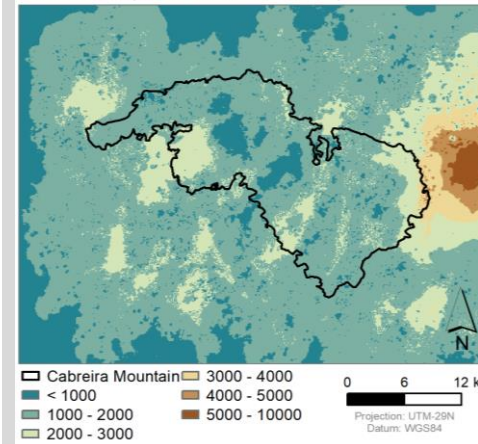


Impact of fuel treatments (10-20%)

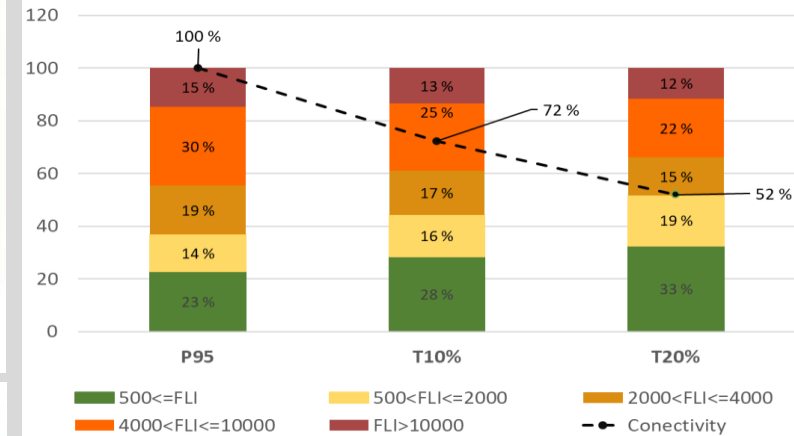
Percentile decrease in Burn Probability (T=20%)



Fire Size ha (Treat.=20% ~38000 ha)



Fireline Intensity (FLI) classes (kW/m) for Extreme (P95) weather scenario and Fuel Treatment levels (10% and 20%). Connectivity metric of the landscape.



Fuel treatments (10 to 20%) potentially reduce fire exposure by decreasing:

- landscape connectivity in 28 to 48%;
- burn probability in 17 to 36%;
- fire size in 20 to 39%;
- fireline intensity in 11 to 61%.

¹University of Lisbon, School of Agriculture, Forest Research Centre, Lisbon, Portugal (anasa30@gmail.com)

²National Authority of Emergency and Civil Protection, Lisbon, Portugal

³Institute of BioEconomy (CNR IBE), National Research Council of Italy, Sassari, Italy