



Assessing economical losses in pulp industry properties due to large wildfires in central Portugal

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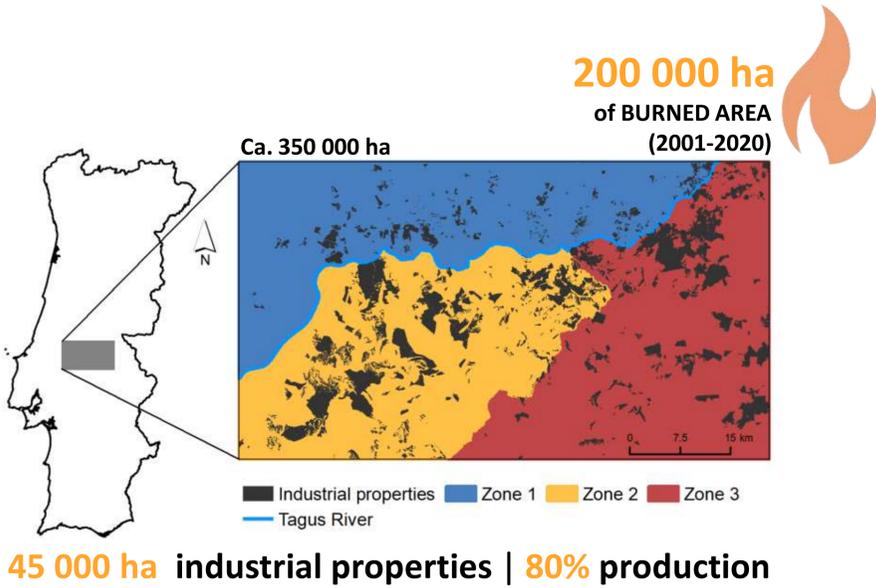
Background

In the last decades Mediterranean countries have been facing an **increase of wildfire intensity and frequency**. Portugal is no exception, reporting extremely severe wildfire seasons, causing **fatalities and losses for millions of euros**. Fire spread and behaviour simulations have been used worldwide to assess **wildfire exposure and risk** and to produce relevant information to support **wildfire management decisions**.

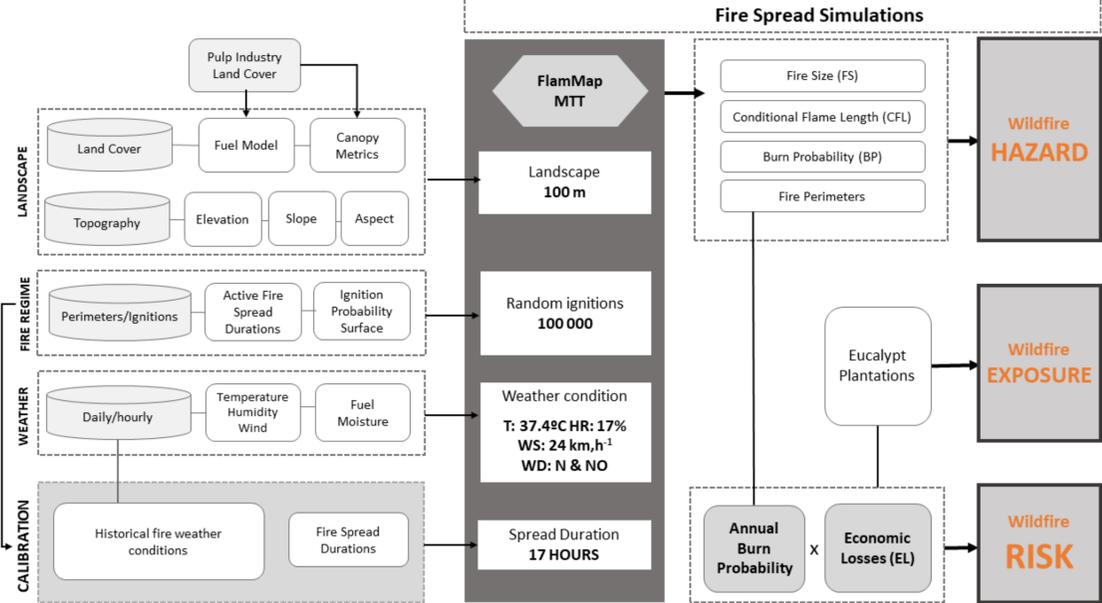
Objectives

This study aims to assess, for the year of **2021**:

- a) landscape-scale **exposure of pulp industrial properties** to large wildfires (>1 000 ha) spreading under extreme (97th percentile) weather conditions;
- b) wildfire **risk in production eucalypt plantations**, as **annual economic losses**.

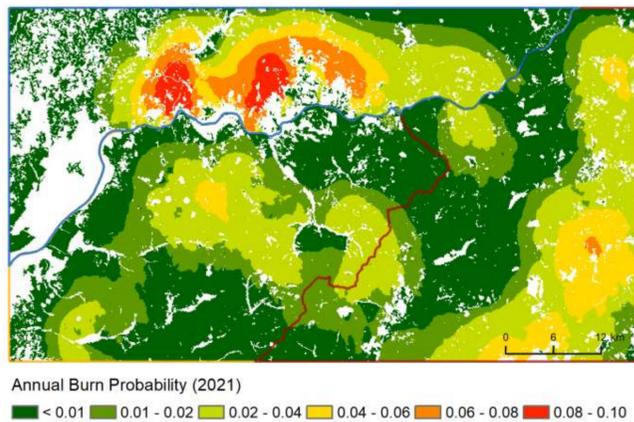


Flowchart



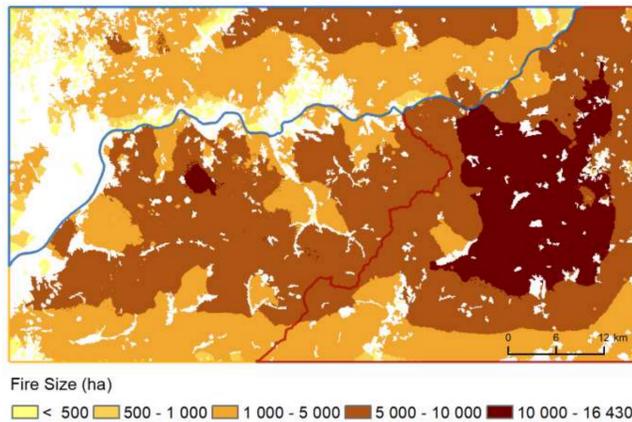
Fourty percent

of the study area shows **burn probability larger than 2 %**



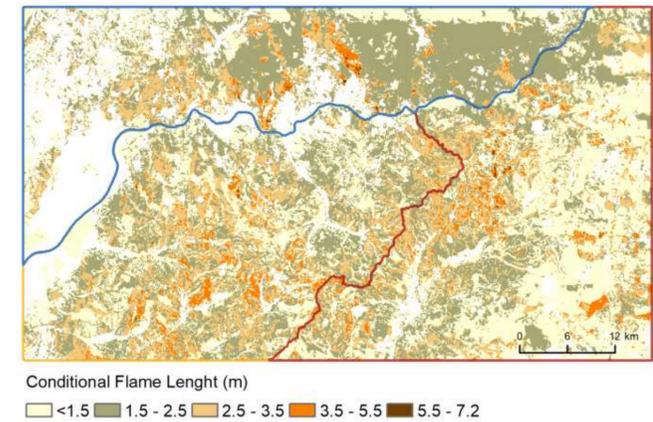
Sixty percent

of the study area shows the potential to spread fires larger than **5 000 hectares**



Twenty percent

of the study area shows **conditional flame length** values longer than **2.5 meters** (control efforts at the fire head probably are ineffective)



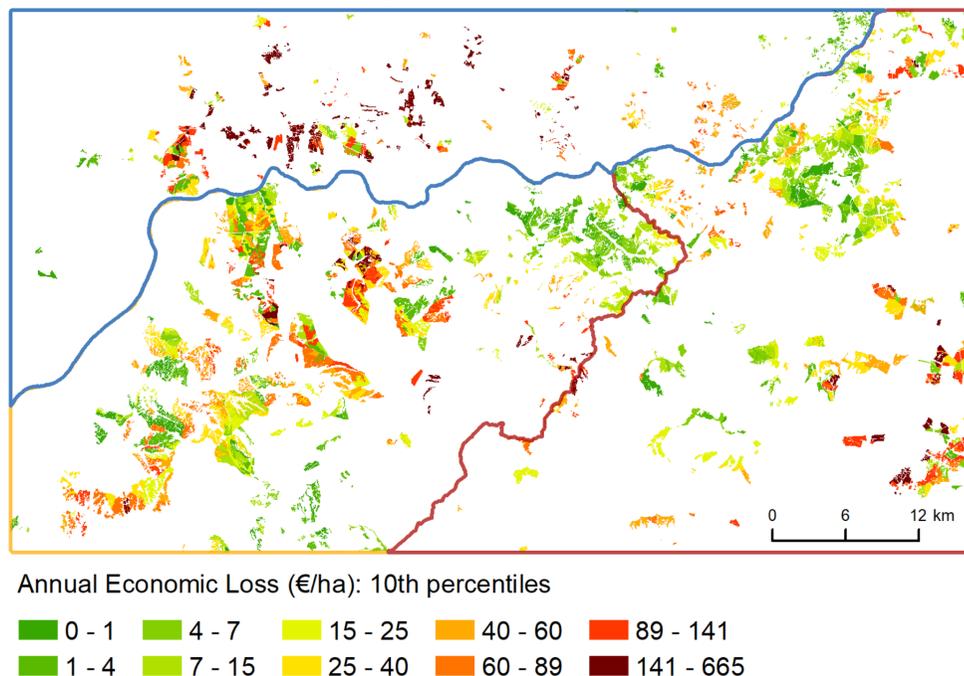
Exposure

Zone 1: Eucalypt plantations younger than 10 years are likely exposed to wildfires. Within 1-km neighborhood, the highest BP values are in non-industrial eucalypts

Zone 2: Plantations older than 10 years are located in areas with larger FS values. Large and intense wildfires in the neighborhood are in non-industrial eucalypt plantations

Zone 3: All properties are very likely exposed to large wildfires, where pastures in the neighborhood are associated with the highest landscape values of BP and FS

7 % within the highest-range class of annual economic losses



Conclusions

This study identifies and locates the most likely exposed properties to large wildfires, as well as the estimated losses derived from spreading fires under extreme weather conditions

It provides relevant information to support landscape fuel and fire suppression management decisions under competing resources.