Impacts of land use changes (2001-2021) on wildfire risk in San Diego County, California

INTRODUCTION

In the western United States, the expansion of WUIs has led to a sharp rise in wildfire-related infrastructure losses, with a 246% increase since 2000. To effectively reduce wildfire risk, it is essential to integrate wildfire hazard assessments into regional land-use planning.

Objetives:

Map the expansion of WUIs from 2001-2021 and assess their intersection with wildfire risk zones.

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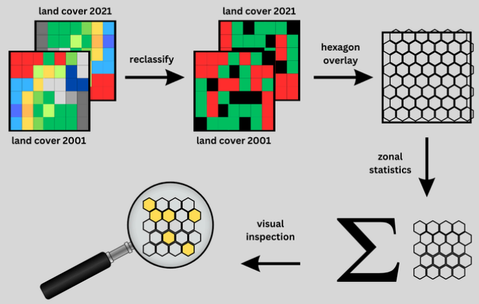
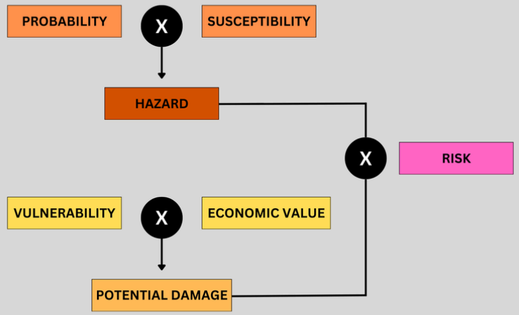
Data sources and further information:

SCAN ME!

WUI extraction

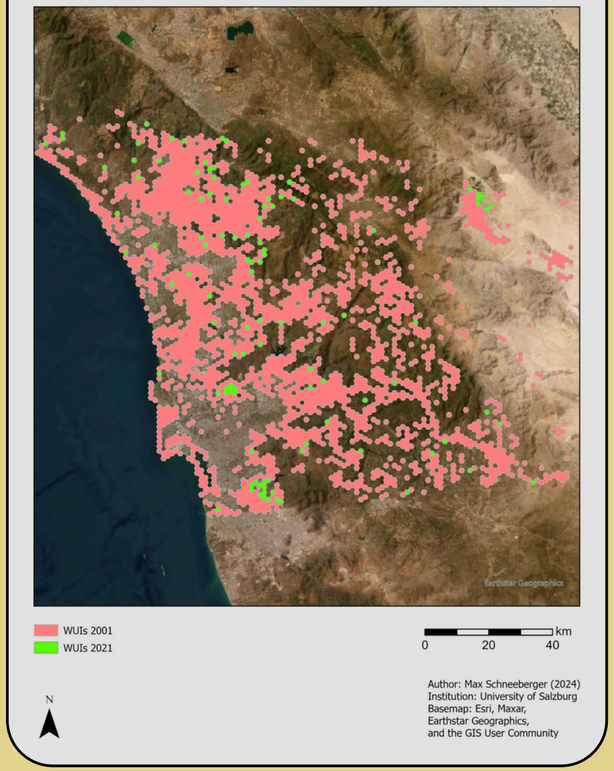


Wildfire Risk Mapping

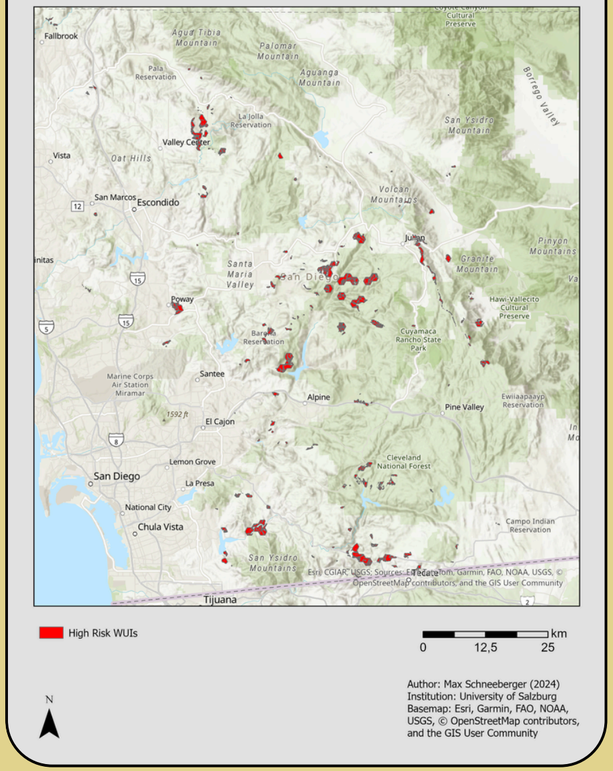


RESULTS

WUI extension (2001-2021), San Diego County



High Risk WUIs (2021), San Diego County



STUDY AREA

San Diego County, California, covers 10,900 km² with diverse geography and a Mediterranean climate including a rich history in wildfires.

DISCUSSION

This study successfully applied a wildfire risk mapping approach to San Diego County. A 100 km² WUI expansion (2001–2021) was detected, with 90 km² of current WUIs in high-risk wildfire zones. The workflow proved effective, with minor acceptable inaccuracies. Results highlight the need to integrate WUI and wildfire risk mapping into land use planning to reduce future wildfire impacts.