

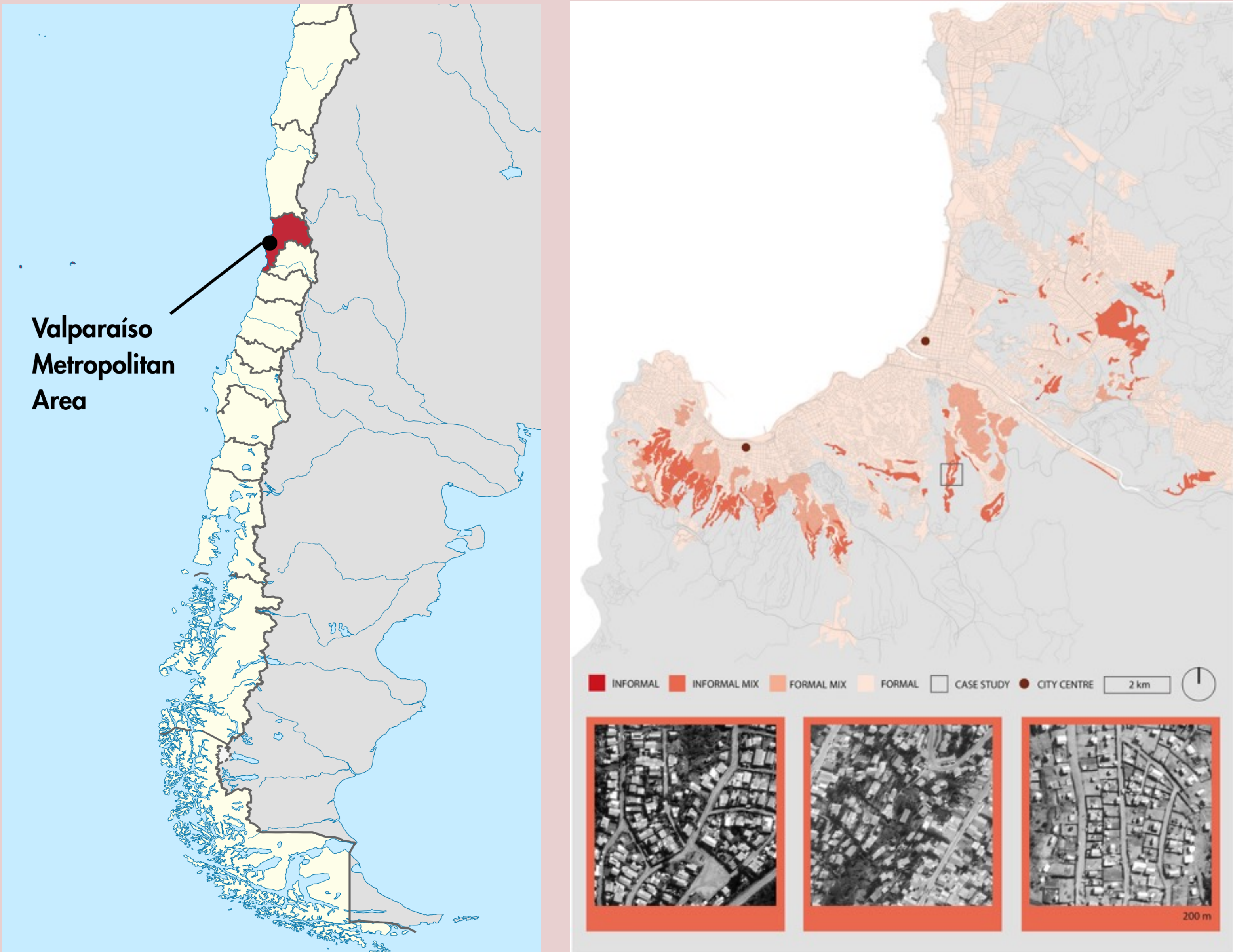
We Didn't Start the Fire

Natural Disaster Planning in Informal Settlements

Case Baumwart | Urban Studies | College of Woster



Valparaíso, Chile | Mid-sized Coastal City in South America
Largest Informal Settlement Presence in Chile

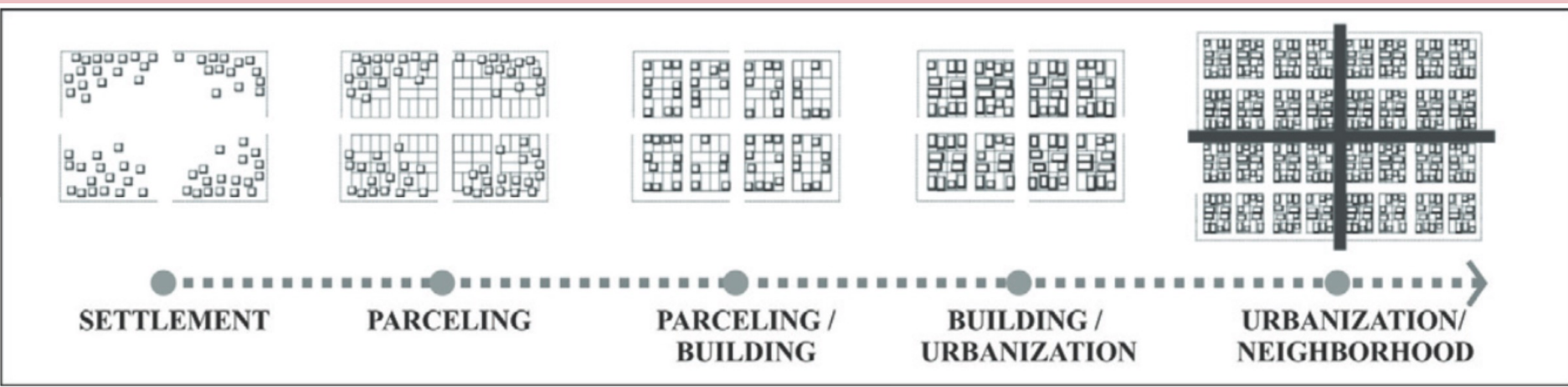


(Source: Alegría & Dovey, 2022)

Informal Settlements



- Financial, Tenure Instability
- Invisible in media
- Ascendant Model of growth
- Informal Space becomes legitimized through following this growth pattern
- This Legitimization is central purpose



(Source: Sakay et al., 1999)

Central Question

How is Informal Settlement growth affected by disasters?

Methodology

Sources

Demography Data
16,000 informal residents in Valparaíso area

Settlement Data
Residents categorized into 123 Settlements in selected area

Fire Data
Satellite data from the 2023-2024 fire season

Analysis

Risk Measurement
Matched residents to settlements, then categorized settlements by the amount of nearby (>1km) fires

Spatial Analysis
Analyzed differences in demography from high risk and low risk settlement residents

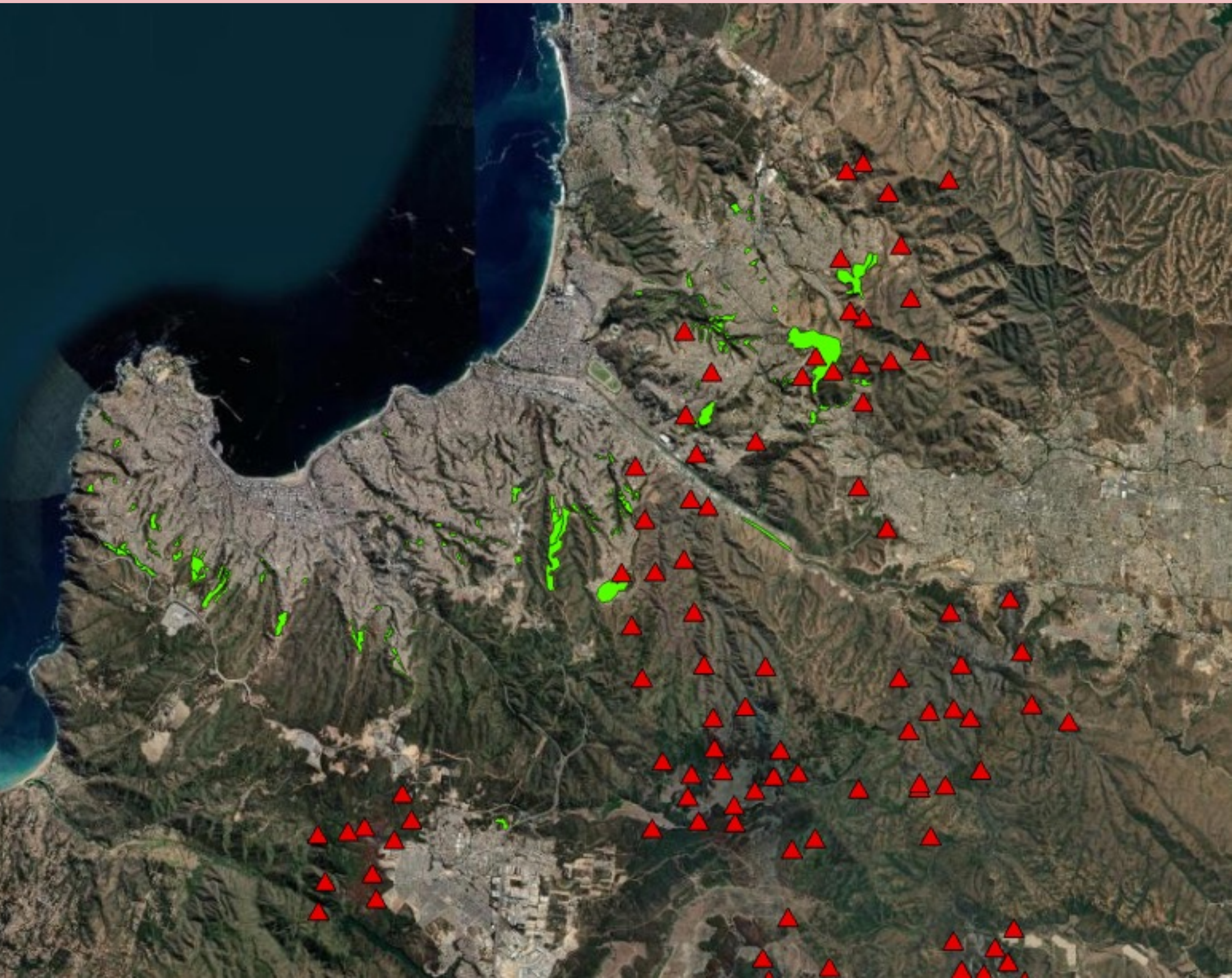
Chi Square
Found high correlation by running a chi square on fire risk and factors like educational attainment and housing consolidation

Fire Risk and Housing Attainment

Housing Attainment	High (%)	Medium (%)	Low (%)	Total (%)
Occupied Site	2107 (38.2%)	1387 (48.8%)	4462 (43.1%)	7956 (42.7%)
Inherited Site	1217 (22.1%)	642 (22.6%)	2341 (22.6%)	4197 (22.5%)
Legal Owner	320 (5.8%)	87 (3.1%)	675 (6.5%)	1082 (5.8%)
Bought/Rented	1283 (23.3%)	492 (17.3%)	1589 (15.4%)	3364 (18.1%)
Other	592 (10.7%)	236 (8.3%)	1277 (12.3%)	2105 (11.3%)
Total	5519	2844	10344	18707

Findings

▲ Fire Origins ■ Settlements



- Settlements exist outside planning schemes despite being incredibly vulnerable
- Many settlements exist in the periphery of urban space, near the fire-prone chaparral biome
- Little government support is given to destroyed settlements and loss of life
- To foster resilient settlements, we must support ascendant growth and include settlements in Disaster Risk Reduction (DRR) planning

References

Alegría, V., & Dovey, K. (2022). Morphogenesis of contemporary informal settlement in Chile. *URBAN DESIGN International*. <https://doi.org/10.1057/s41289-022-00192-y>

AKAY, C., SANONI, P. & HANAZATO, T. (2011). 'Rural to Urban Squatter Settlements: The Micro Model of Generational Self-Help Housing in Lima-Peru', *Procedia Engineering*, Vol.21, pp.473-480 "Squatter Settlements as social catalysts towards a sustainable urban development: A positive look at the case of Villa El Salvador, Lima-Peru"