ASSESSMENT OF POST-FIRE FOREST STRUCTURAL DIVERSITY USING NEIGHBOURHOOD BASED PARAMETERS IN THE SIERRA MADRE ORIENTAL, MEXICO.

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INTRODUCTION

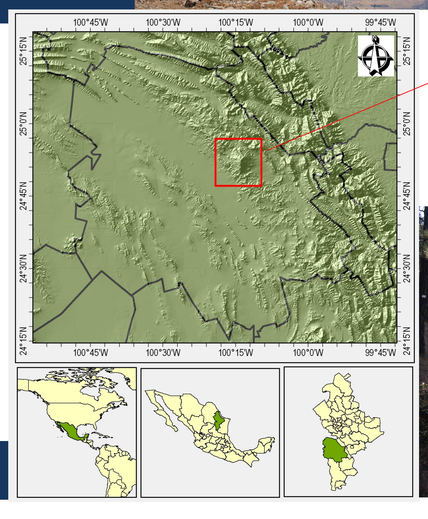
The structure and dynamics of most forest ecosystems are strongly influenced by several natural disturbances. Fire in the Sierra Madre Oriental is one of the most common disturbances in these ecosystems, affecting the spatial distribution of trees as well as the main features of forest. Nevertheless, in what extent fire may affects the structural diversity is hardly known in mexican forest.

OBJECTIVE

The goal of this research was to characterise the post- fire spatial structural patterns in a *Pinus hartwegii* (Lindl.) forest in the Sierra Madre Oriental, Mexico, affected by the 1998 forest fire.

METHODS

- We defined three fire severity classes based on the degree of consumption of the pine canopy (low, medium, and high).
- Three samplings plots of 40mX40m were established on each fire severity.
- Dasometric variables were obtained .
- To describe the stand structure three groups of indices were employed: “contagion” and “distances” (*Wi* and *Di*), “dominance” (*Ui*) and “size differentiation” (*TDi* and *THi*).

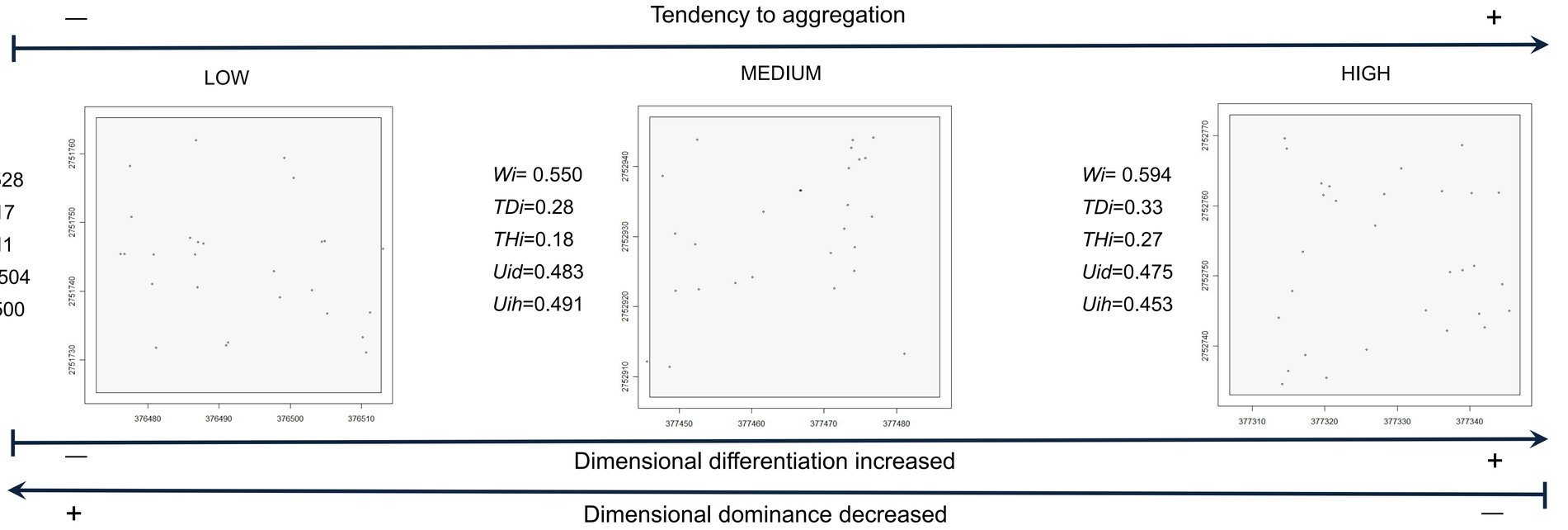


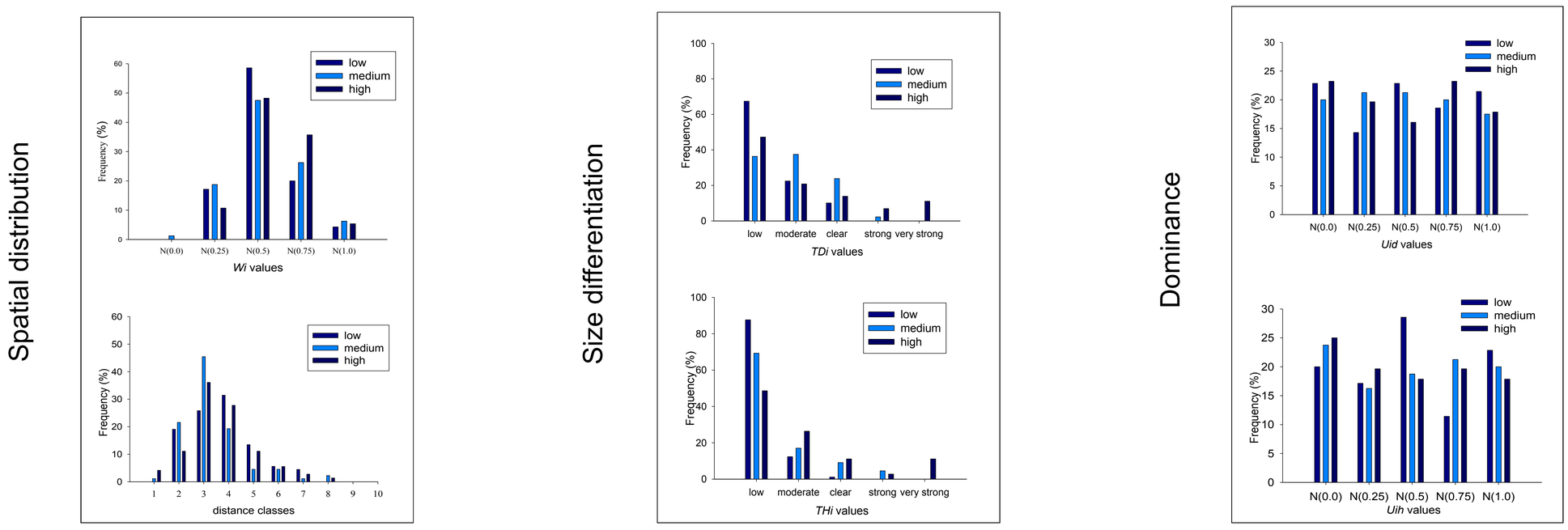
Cerro El Potosí

Types of vegetation: pine, oak and mixed forests

RESULTS

Spatial distribution of *Pinus hartwegii* (Lindl.)





CONCLUSIONS

The results show that with increasing fire severity increases the degree of clustering as well as the differentiation in diameter and height, the other hand, the dominance of size decreases with increasing severity.

The set of indices used in this study allowed to describe the effects of fire in the spatial forest structure of mexican ecosystems.