THE IMPACT OF MACROCLIMATE, MANAGEMENT AND EDGE-TO-CORE GRADIENTS ON FOREST STRUCTURE

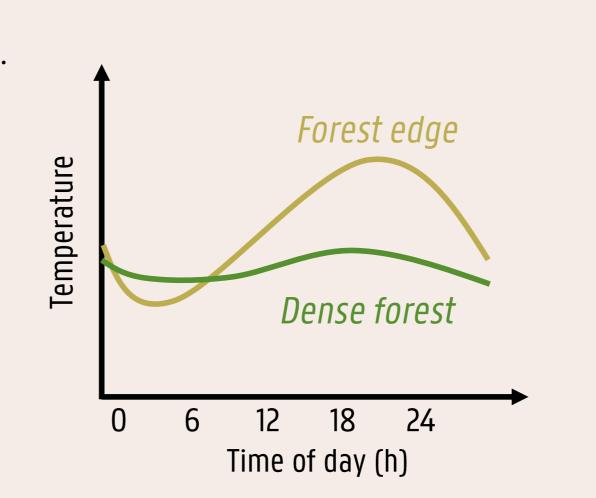
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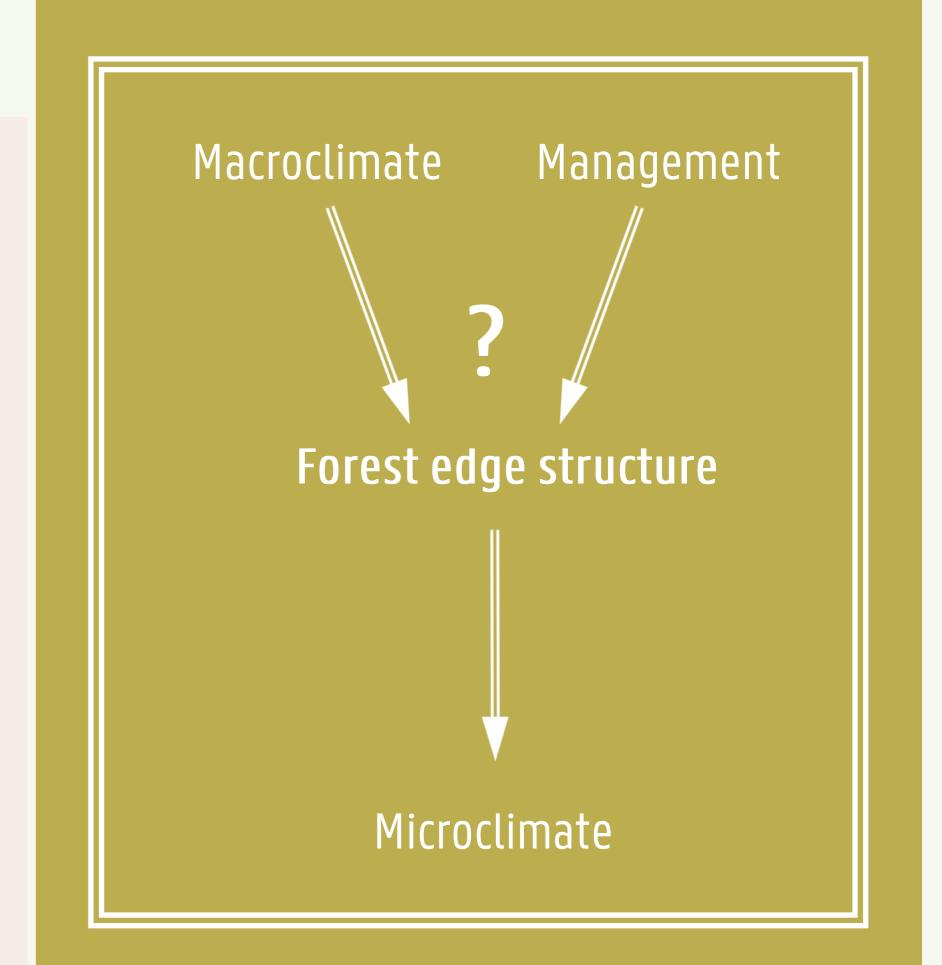
Background information

- **Forest edges** form a transition zone between forest interior and adjacent non-forest habitat. These transition zones (within 100 m of the forest edge) encompass approximately 20% of the remaining global forested area and are unique concerning functions, ecosystem services and structure.
- Forest edge **structure and composition** play a key role in establishing a typical forest microclimate (the whole set of climatic parameters assessed near the ground on a small spatial scale) which helps to buffer the effects of climate change on understorey communities. Though, **forest management** could disturb this process through the removal of structural elements.
- Before gaining insight into how edge structure shapes the microclimate we need to fully understand the variation and the drivers of forest edge structure.



Objectives

- Understand how forest edgestructure varies across Europe
- Study how structural differences modify the microclimate (future research)



3. Extracting structural metrics

Canopy height

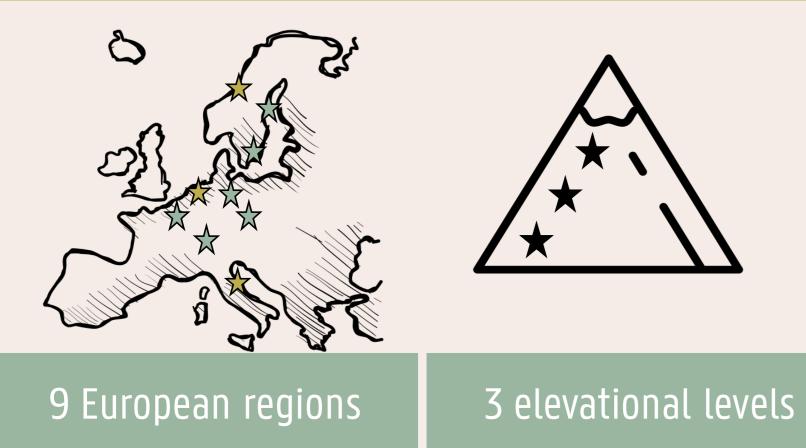
Centroid

Canopy

openness

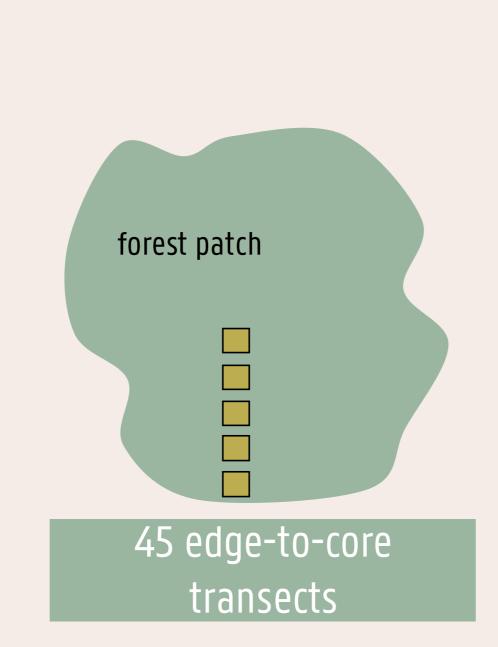
Set up

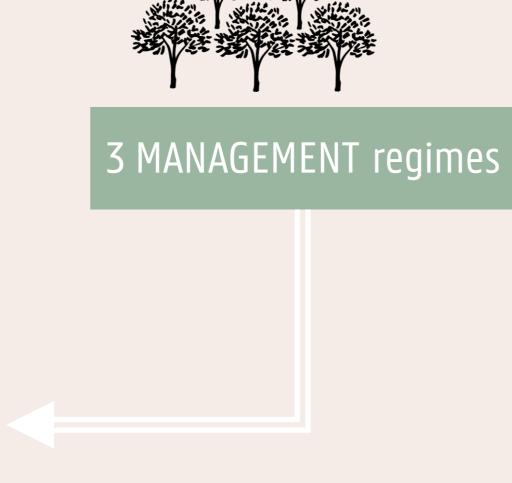
225 plots across 45 edge-to-core transects



- Region without elevational gradient (only lowland)
- Region with elevational gradient

MACROCLIMATE





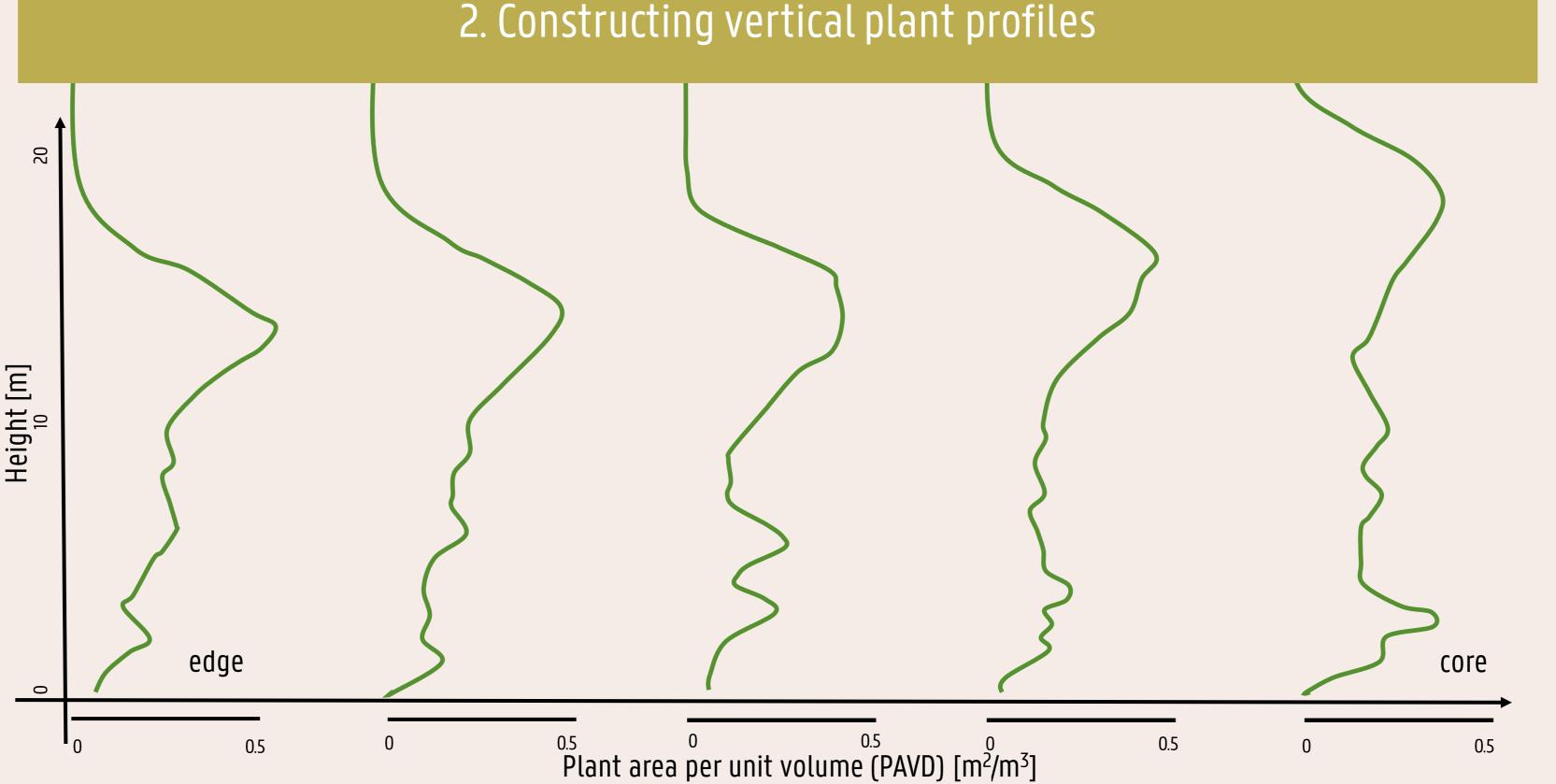
intensively

unmanaged

managed

Method

1. Collecting TLS data



Future research

Study the relationship between forest edge structure and microclimate

Build a predictive model of forest microclimates

Provide site and situation specific guidelines on forest edge management

Contact

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 R^{G} FORMICA ERC project: microclimatic buffering of plant responses to macroclimate warming in temperate forests

Results & General conclusion

Predicted values of PAI High shade tolerance* Intermediate shade tolerance Low shade tolerance Composite edg "Shade tolerance is the ca high shade tolerance requires to the calculation of the cal

Management,
macroclimate and species
composition affect forest
edge structure

*Shade tolerance is the capacity for growth in the shade; species with a high shade tolerance require low light availabilities to be able to grow













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