



Are understorey plant communities affected by the interaction of multiple disturbances?



Sudha Ghimire¹, Nicole Fenton¹, Osvaldo Valeria¹
¹ Forest Research Institute, University of Quebec in Abitibi Temiscamingue



Context

- ↑ Boreal forest supports a wide range of biodiversity
- ↑ Ecosystems are influenced by the complex interaction of multiple disturbances that can occur simultaneously and/or sequentially
- ↑ Effect can become pronounced when they multiply
- ↑ Impacts on vegetation, especially non-vascular plant communities
- ↑ Bryophytes play a crucial role in ecosystem functions, such as carbon sequestration, nutrient cycling, moisture regulation, and soil temperature control
- ↑ Multiple disturbances can profoundly affect their microhabitat conditions, growth, and long-term survival

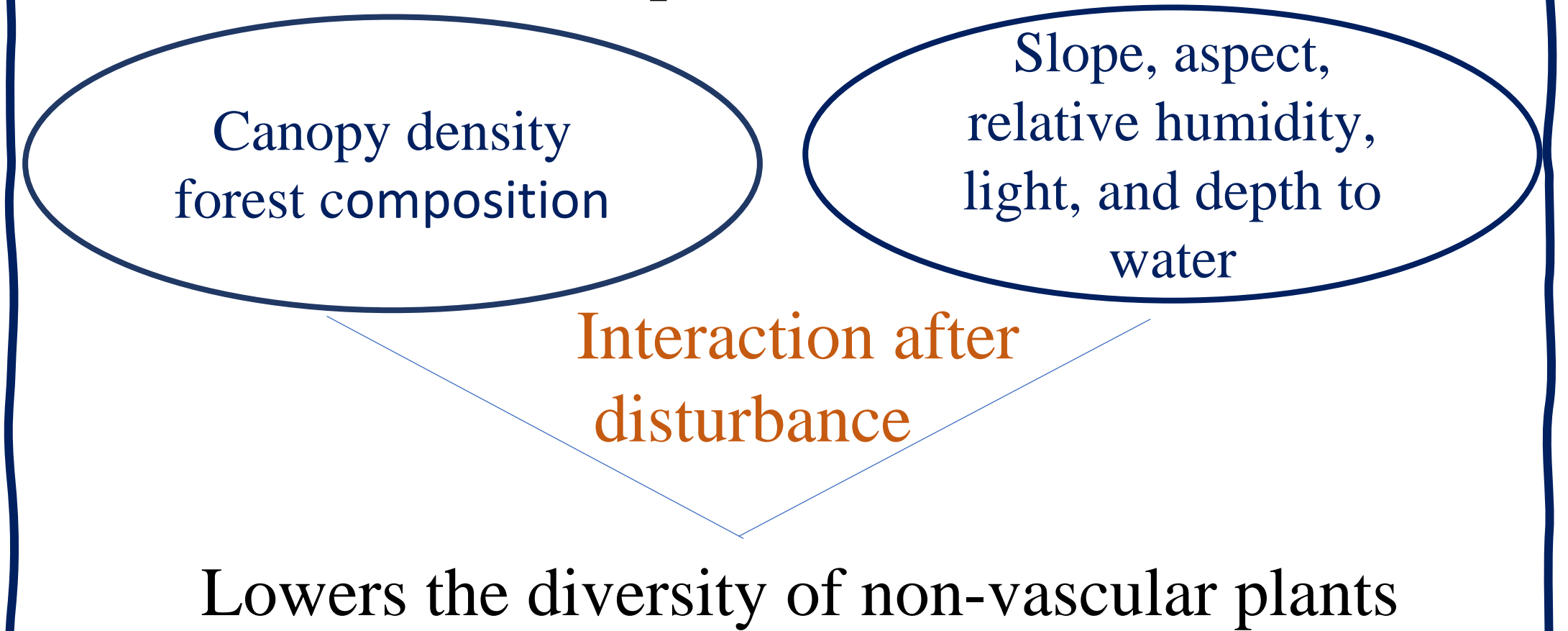


Photo by: Sylvain Jutras



Hypothesis

- ↑ The diversity and composition of specialist species change non-linearly due to the interaction of disturbances in comparison to generalist species and their effect is synergistic in sites with multiple disturbances.



Methodology

Disturbance Map

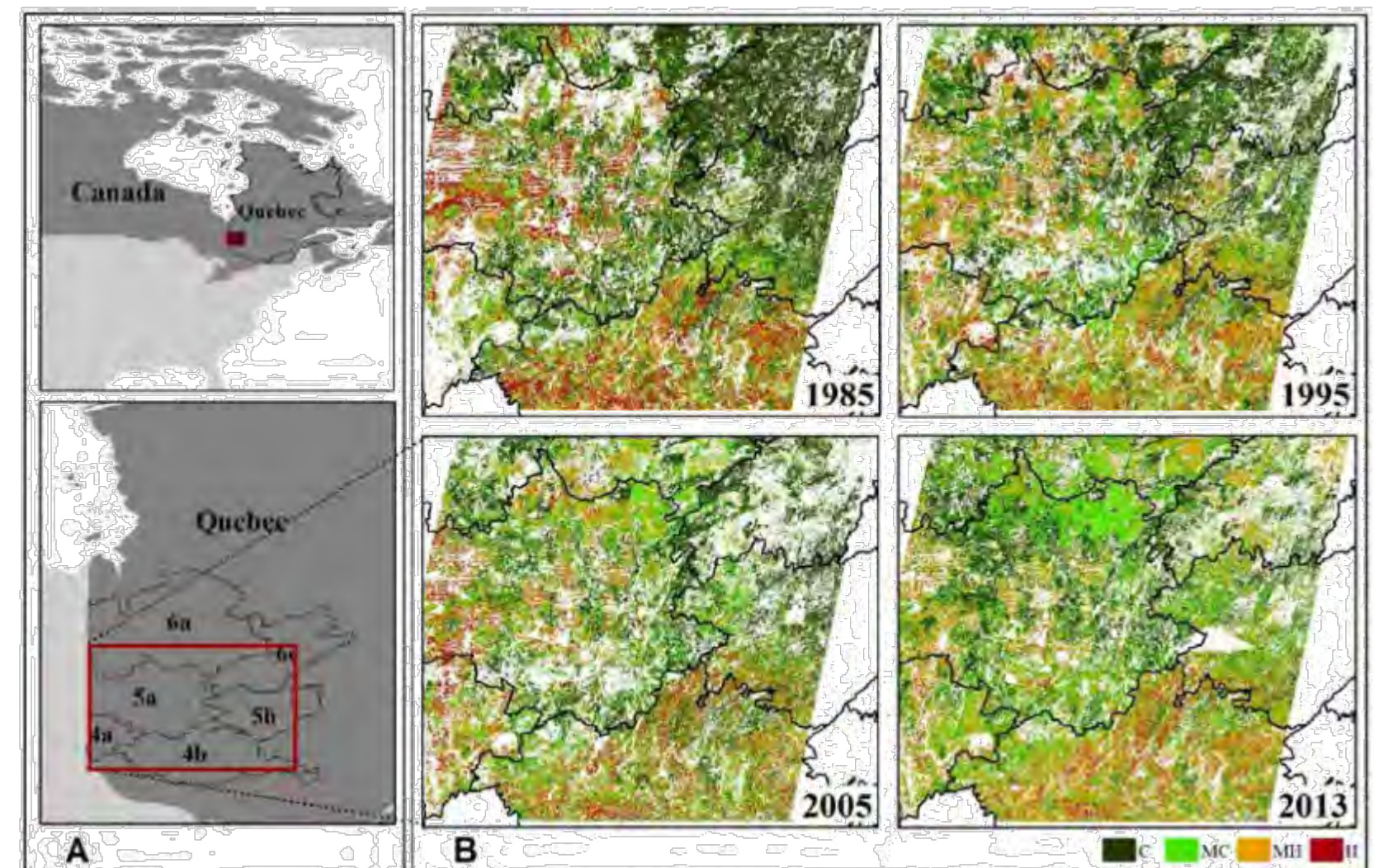


Photo by: Eliana Molina



Research Need

- ↑ Limited research on the impact of multiple disturbances and their interaction on understorey plant communities
- ↑ Previous studies are only in effect of a single disturbance on bryophytes
- ↑ The unavailability of a statistical dataset with high spatial and temporal resolution makes it difficult to study the interaction between disturbances

Field Survey

- ↑ Understorey plant communities will be recorded in each plot using floristic habitat sampling

Remote Sensing

- ↑ We will utilize remote sensing and spatial modeling techniques to track the primary factors driving changes in understorey plant communities



Objective

- ↑ How the diversity and composition of understorey plant changes due to disturbances
- ↑ To detect the drivers that cause the change in understorey plant communities



Contribution

- ↑ To identify the vulnerable habitats of bryophytes and develop sustainable management practices for their conservation and management