



# Soil Fungal Communities of Abitibi Esker Forests

Jonathan Cazabonne, Miguel Montoro Girona and Annie DesRochers

Ecology Research Group of MRC Abitibi, Forest Research Institute, University of Quebec in Abitibi-Témiscamingue

[jonathan.cazabonne@uqat.ca](mailto:jonathan.cazabonne@uqat.ca)



## INTRODUCTION

Eskers are **fluvioglacial geological formations** providing many **natural resources** important for the economy and the population.

The associated fungal communities have barely been investigated to date, notably **vertical spatial patterns**.

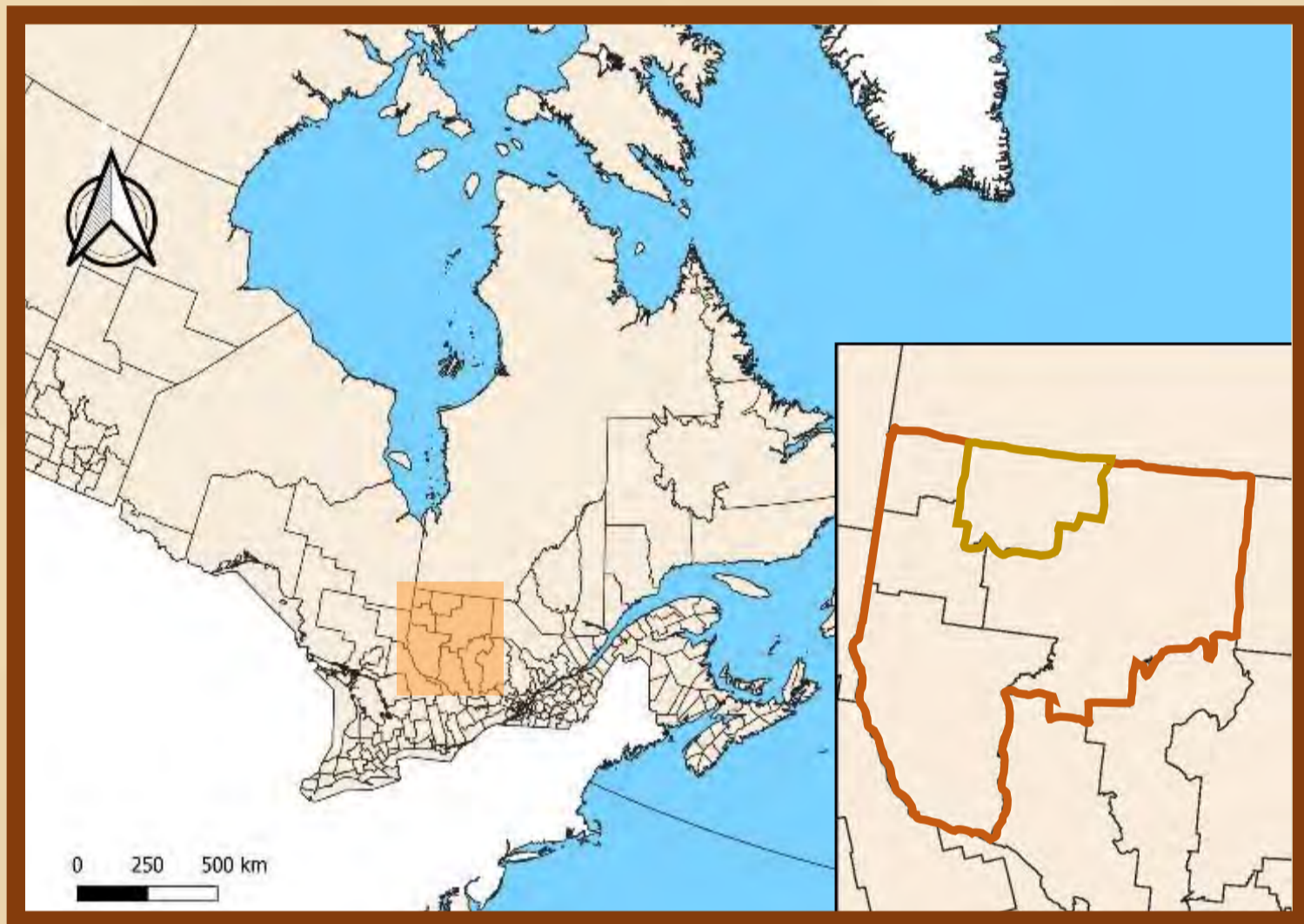
Esker forest ecosystems are **vulnerable** as they are highly sought over for water, wood, sand and gravel.

Need to **fill the gap** in our fundamental knowledge and understanding of these communities.



## MATERIAL AND METHODS

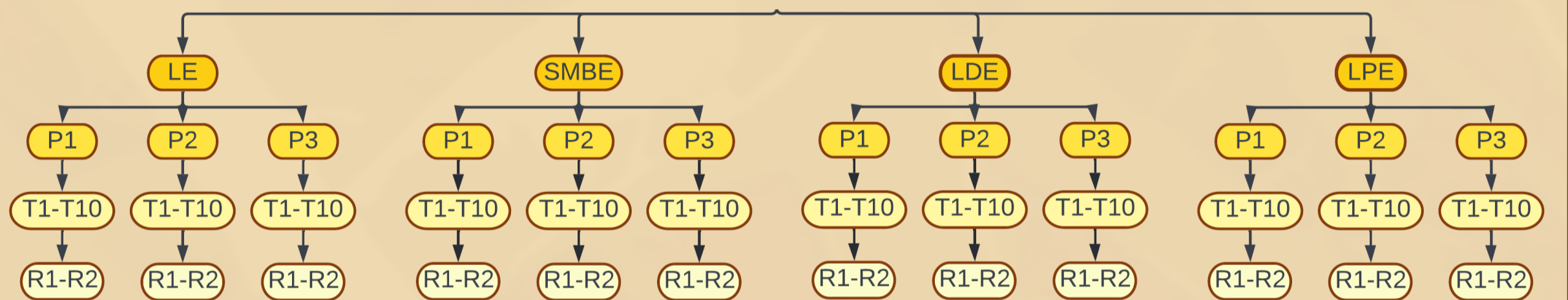
### Study area



## OBJECTIVES

- Characterize the **diversity, composition, and structure** of esker podzol fungal communities across **soil horizons**.
- Determine the **key abiotic and biotic factors** that shape these **belowground communities** on a **vertical axis**.

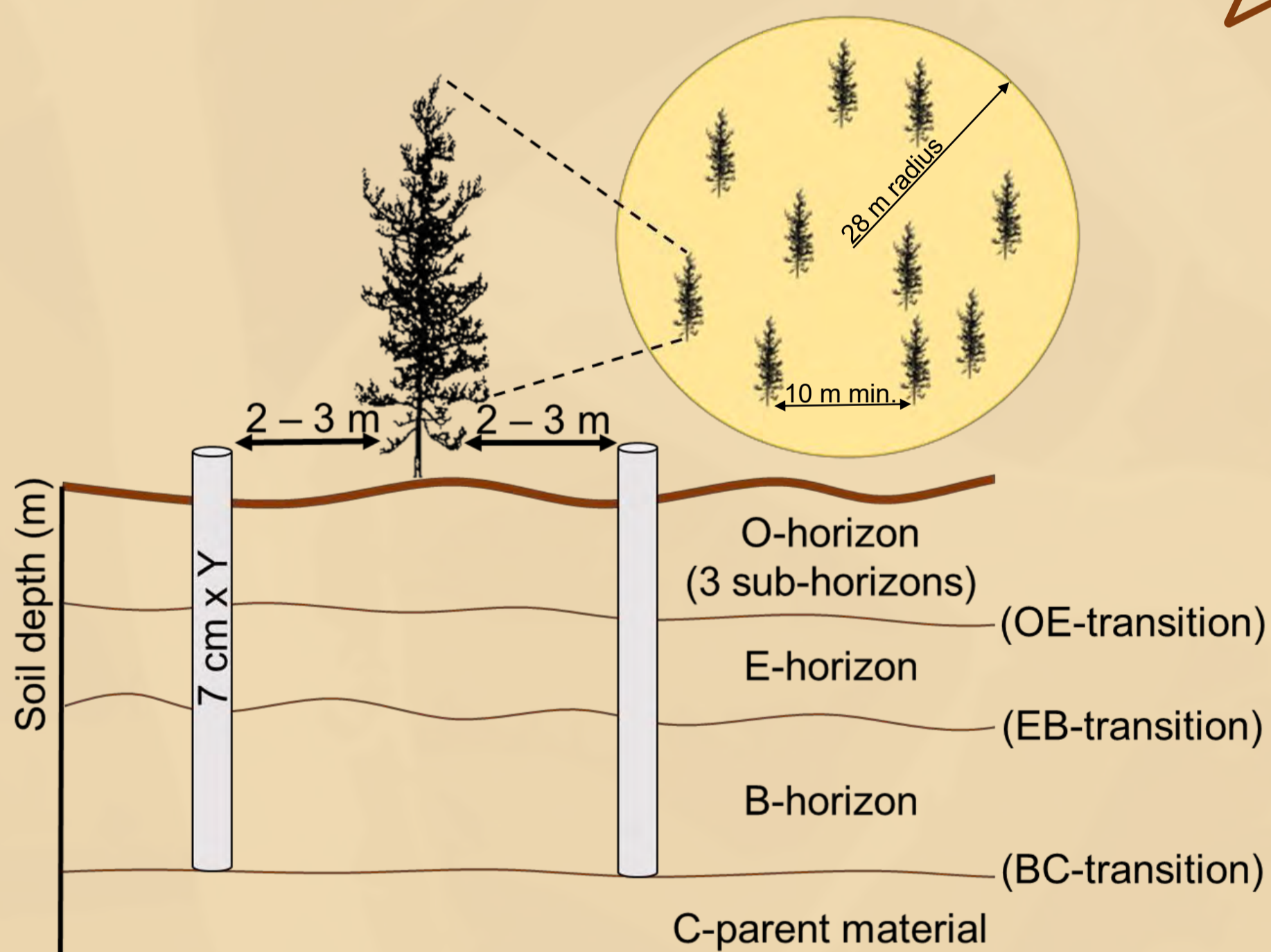
### Experimental design: EskerFunga



- Esker sites will be selected in the **Abitibi region** characterized by **numerous** totally or partially **emerged esker formations** within the glaciolacustrine matrix.

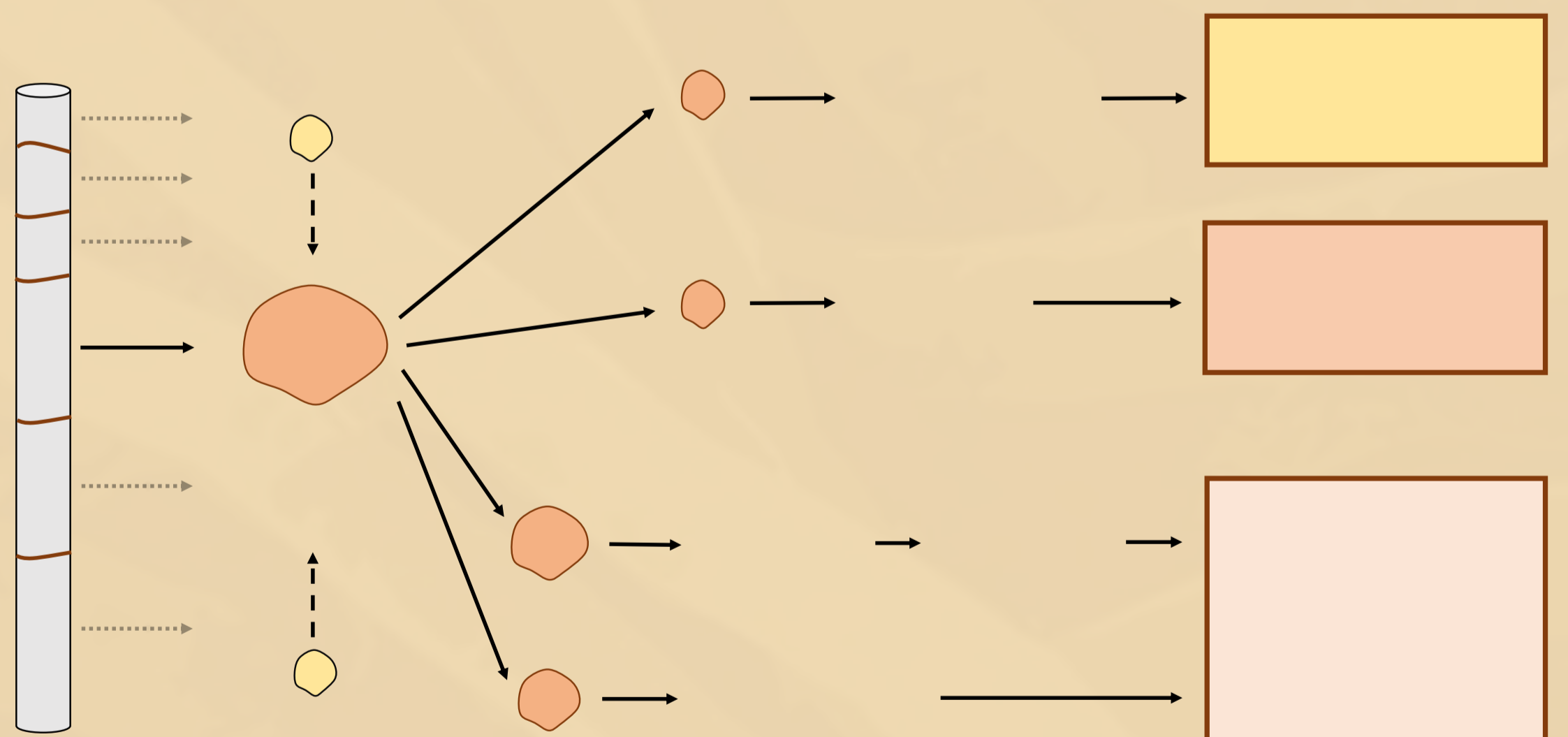
- Composed of **12 (4 eskers x 3 plots) circular plots** (2,500 m<sup>2</sup> each, total of 30,000 m<sup>2</sup>) with a radius of 28 m containing **10 randomly selected trees** (total of 120) at least 10 m from each other with **2 soil core replicates per tree**.

### Soil sampling



- Total of **240 soil cores**, resulting in **72 pooled soil samples**.

### Data analyses



## ORIGINALITY

- First generated, **molecular-based** fungal data with such **inclusive vertical sampling** for this kind of ecosystem worldwide.



## CONTRIBUTIONS

- Understand the **diversity, vertical distribution** and **driving factors** of soil fungal communities in esker forests.

