

INTRODUCTION

In Canada, 71.7% of the population lives in cities⁴ where urban sprawl and human activities are a huge source of airborne contaminants¹. Bioaerosols are fine airborne particles that come from living organisms².

Pollen and microbes are therefore bioaerosols and are the ones this study focuses on. Pollen is a plant reproductive particle that is known as an allergen. Pollen allergies are seasonal due to the reproductive cycle of trees so symptoms can be more severe at certain times of the year and in certain locations.

Microorganisms, on the other hand, are ubiquitous in the environment³, including urban air, and may have an unexpected effect on allergic respiratory problems. However, urban air is not the same everywhere in the same city. Neighborhoods with low economic status have been shown to have less vegetation than those with high socioeconomic status.

OBJECTIVES AND HYPOTHESIS

PRINCIPAL OBJECTIVE

Objective:

Quantify and identify pollen and microorganisms in urban air along socio-economic, vegetation and time gradients.

Hypothesis:

- The density and diversity of these bioaerosols will be directly correlated with the amount and diversity of the surrounding vegetation.
- The quantity and diversity of microorganisms in urban air is correlated with the socio-economic gradient.

METHODOLOGICAL OBJECTIVE

Objective:

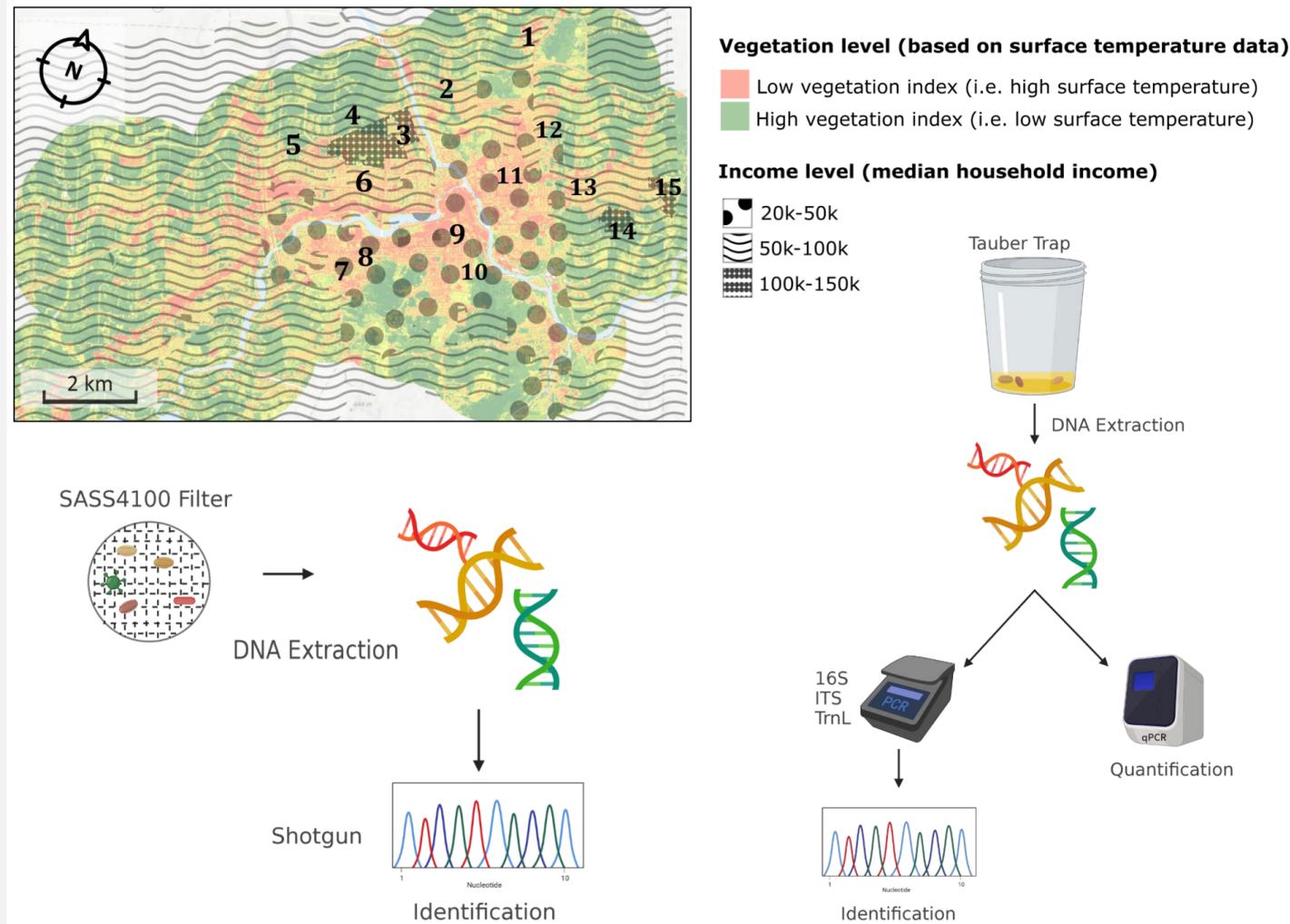
Determine the most effective method for tracking pollens and airborne microorganisms.

Hypothesis:

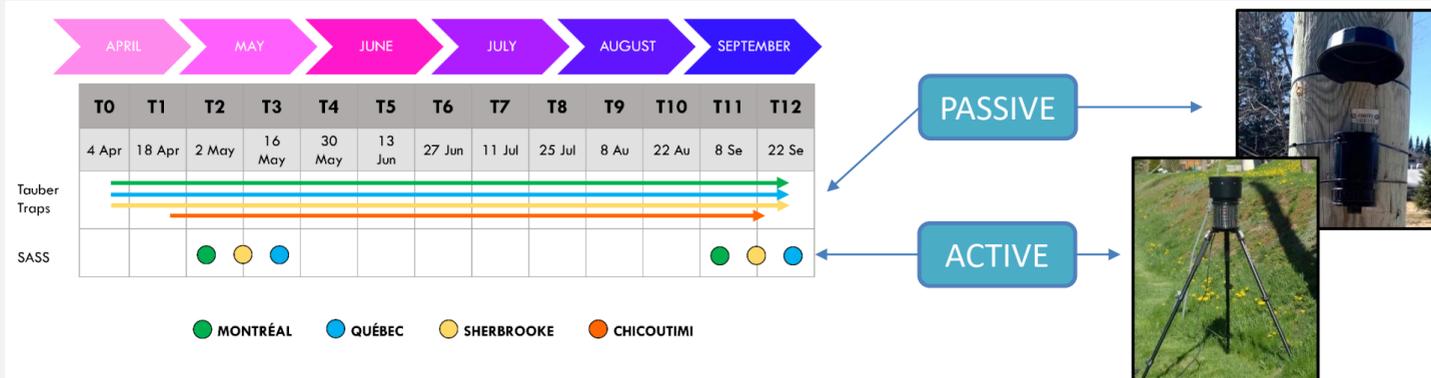
The active method will be more effective in monitoring these bioaerosols.

EXPERIMENTAL FRAMEWORK

PRINCIPAL OBJECTIVE



METHODOLOGICAL OBJECTIVE



IMPORTANCE ET IMPACT

Understand

Understanding the role of bioaerosol quantity and diversity in human respiratory diseases.

Advance

Advancing knowledge of microorganisms and pollen types in urban outdoor air.

Discover

Discover the differences between air pollens and microbes according to the socio-economic status of neighborhoods.

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Figures were produced with BioRender.

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