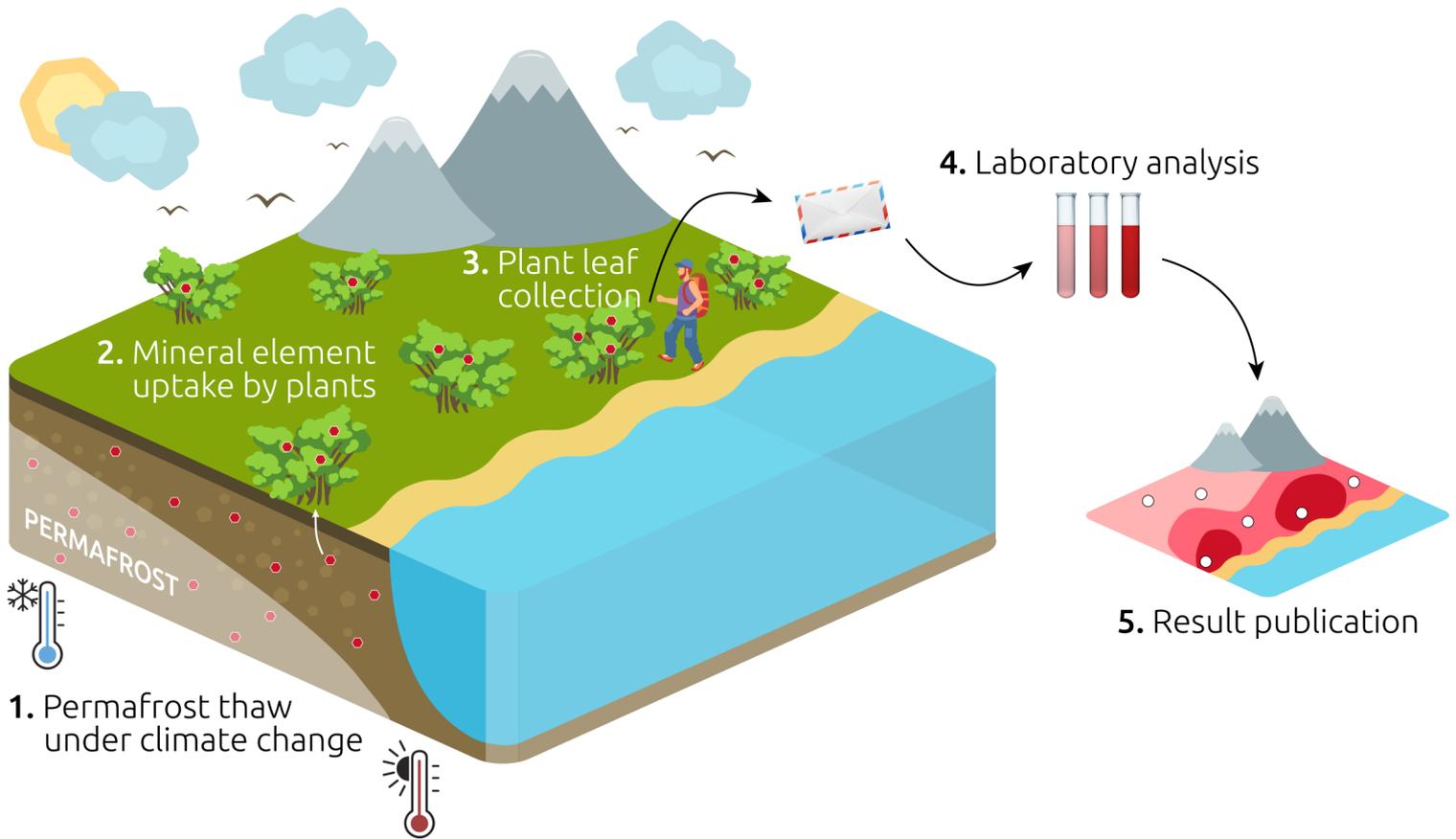


Collect leaves and contribute to understand climate change effects



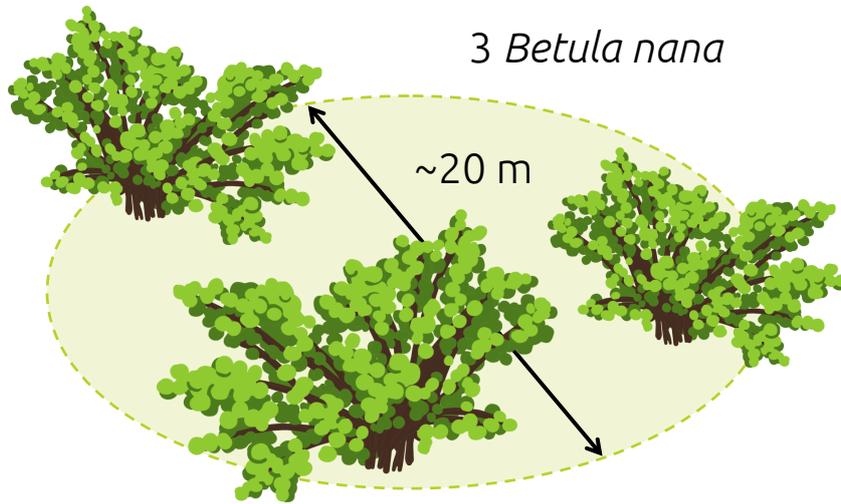
BetuLeaf project

Global climate change is affecting Arctic ecosystems. Higher annual air temperature in the Arctic causes the thawing of permafrost (currently permanently frozen ground), leaking mineral elements into soil water that are eventually absorbed by plants. As scientists, we want to study which elements end up in plants, and their impact (positive or negative) on plant health.

How can you help?

A large scale collection of leaves, specifically that of common dwarf birch (*Betula nana* L.), would allow us to measure the element transfer from permafrost to Arctic ecosystems. The leaves that you will collect during your walk will be sent to our laboratory in Paris, France, to assess the different mineral element concentrations (for example, copper, nickel, selenium, and lead). We will localize this measurement and generate a map of element concentrations. As *Betula nana* can be found in many Arctic locations, we will be able to compare the distribution of elements and track the effect of climate change on ecosystem health.

Sampling site



Data collection



Sampling date
ex: *dd-mm-yyyy*



Closest town
ex: *Abisko*



Ecosystem type (cf. identification key)
ex: *tundra*



GPS coordinates (using your smartphone)
ex: 68.354°N , 18.815°E or $\text{N } 68^{\circ}21'15''$ / $\text{E } 18^{\circ}48'54''$



Tree height and span (using the envelope)
ex: *30 cm / 20 cm*



OR



span

height

To avoid...

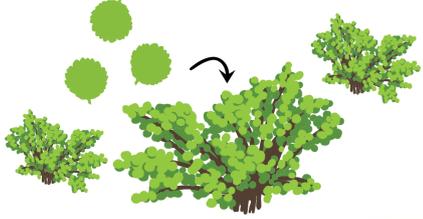
- Do not collect during a rainy day or one day after a heavy rain event
- Do not use glue, tape, or staple to avoid any contamination
- Do not dry the leaves near an open fire, wood-burner, or stove to avoid any dust contamination

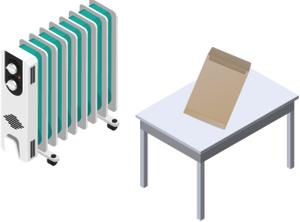
If you wish to be kept informed of the results of the study, or give us the possibility to ask you for additional information on the samples, add your e-mail address.

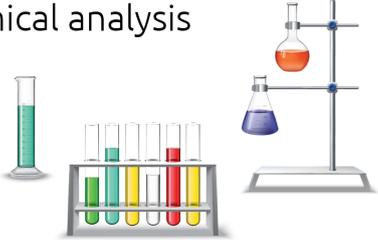
Main steps

- 1** Clean your hands using a clean tissue

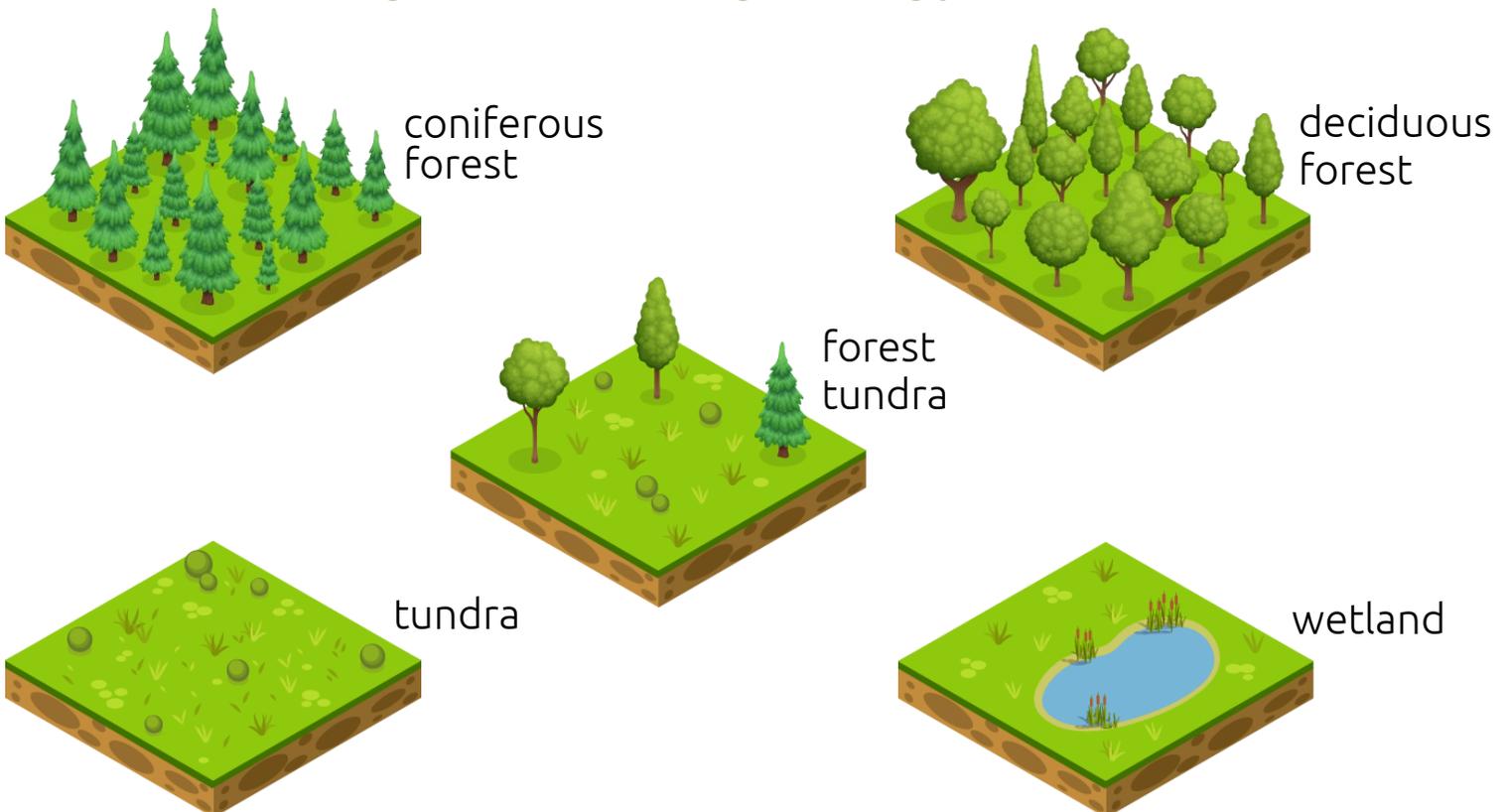
- 2** Fill in the data on the provided envelope

- 3** Collect ~50 leaves on the top branches (from the 3 *Betula nana*)

- 4** Put the leaves in the envelope

- 5** Dry the leaves at room temperature keeping the envelope half-open

- 6** After 2 days, close the envelope and send it

- 7** Chemical analysis


Identification key of Arctic ecosystem types



How to recognize *Betula nana*, the dwarf birch

Betula nana is a **shrub**, a small rounded woody plant with multiple prostrate to ascending branches



50 cm



Flower
small and winged
ascending flowers

1 cm



Leaf
small and nearly round
6-20 mm long
edge with rounded teeth

If unsure, check on the Seek or PlantNet apps



TRAC₃S

More information on:

www.betuleaf.biogeoscience.eu

or scan me:

