

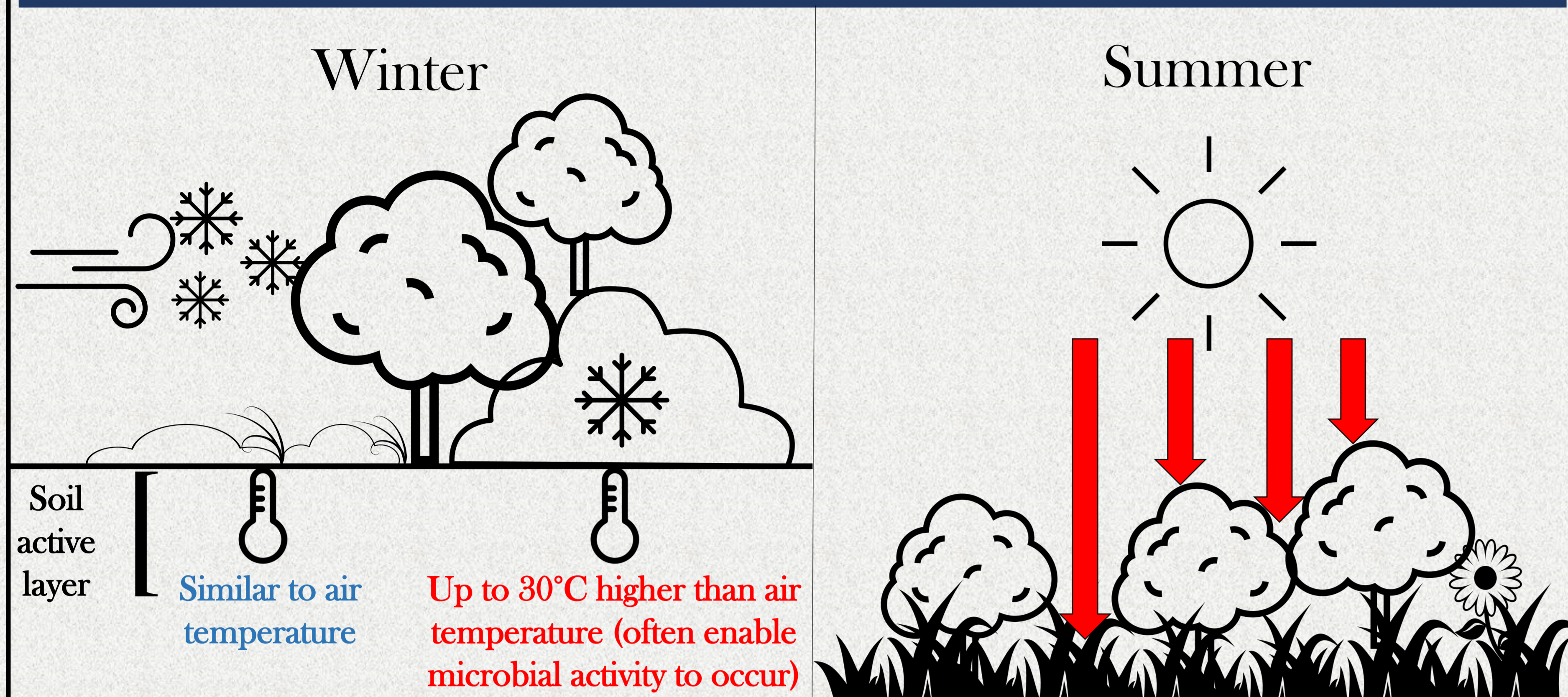
# INDIRECT CONSEQUENCES OF SHRUBIFICATION ON SUMMER FORAGE OF CARIBOU



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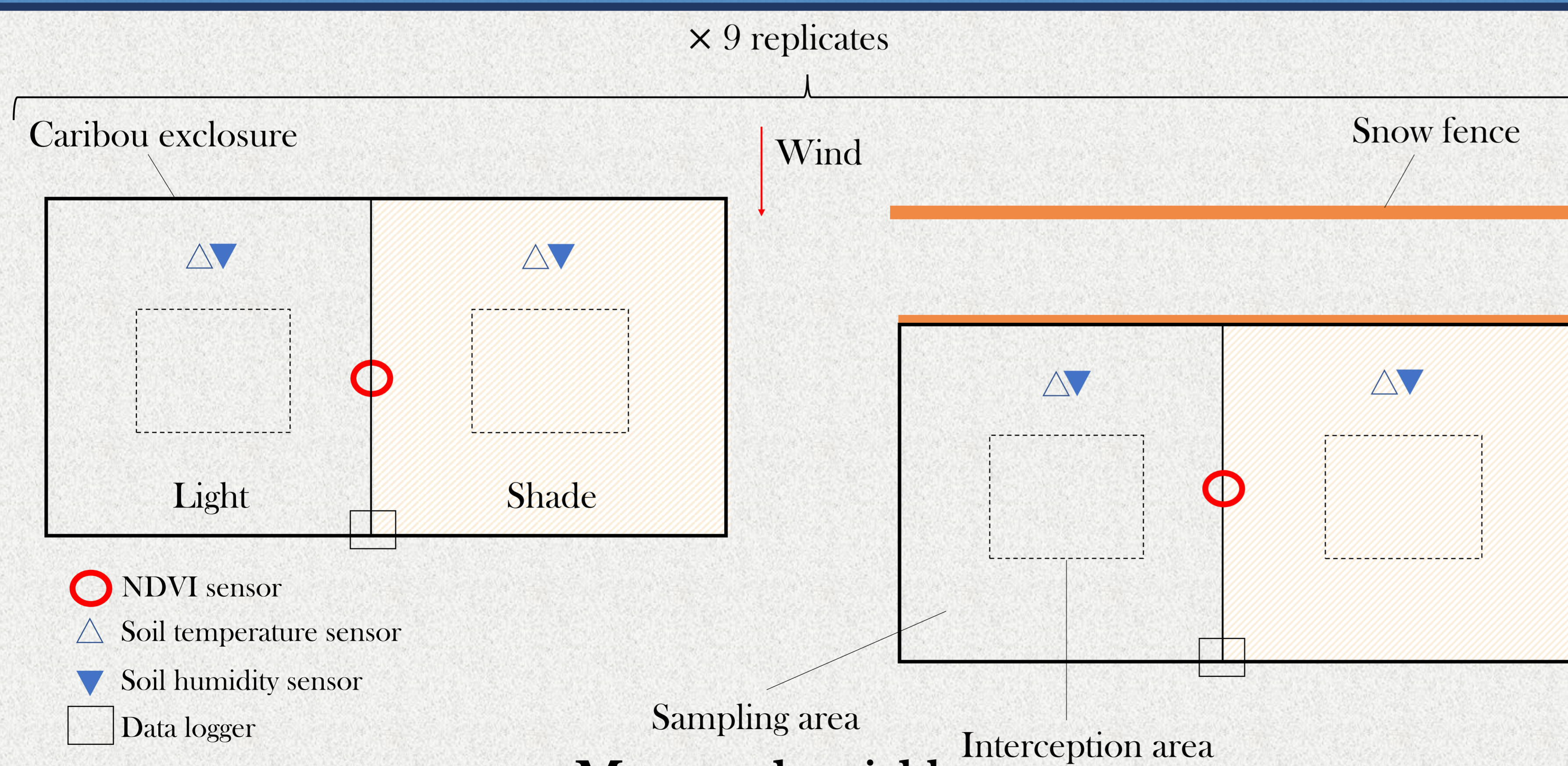
## 1. CONTEXT: SHRUBIFICATION ↑ SNOW COVER AND ↓ LIGHT UNDER THE CANOPY



## 2. OBJECTIVES

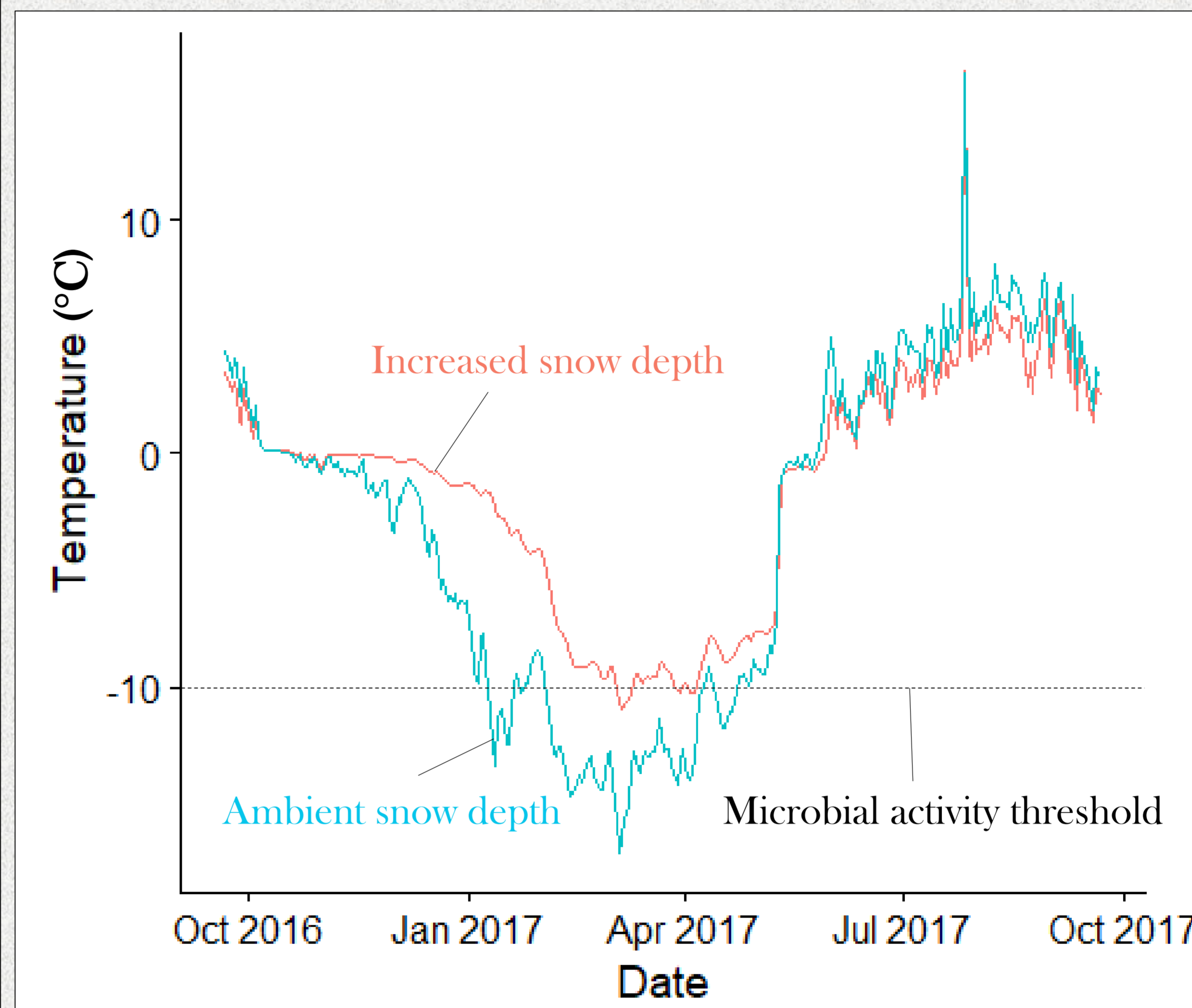
1. Assess how ↑ snow cover and ↓ light affect soil humidity and temperature.
2. Determine how ↑ snow cover and ↓ light affect quantity and quality of forage of caribou through the summer season.
3. Attempt to increase the temporal resolution in the phenological curve of N availability with local normalized difference vegetation index (NDVI).

## 3. METHODS: AN EXPERIMENT SIMULATING EFFECTS OF SHRUBIFICATION



- Biomass (point intercept method)
- Nitrogen, Fibre (ADF), phenol content, digestible nitrogen content
- Soil temperature and humidity, NDVI

## 4. PRELIMINARY RESULTS: THE SNOW FENCE TREATMENT IS INSULATING THE SOIL

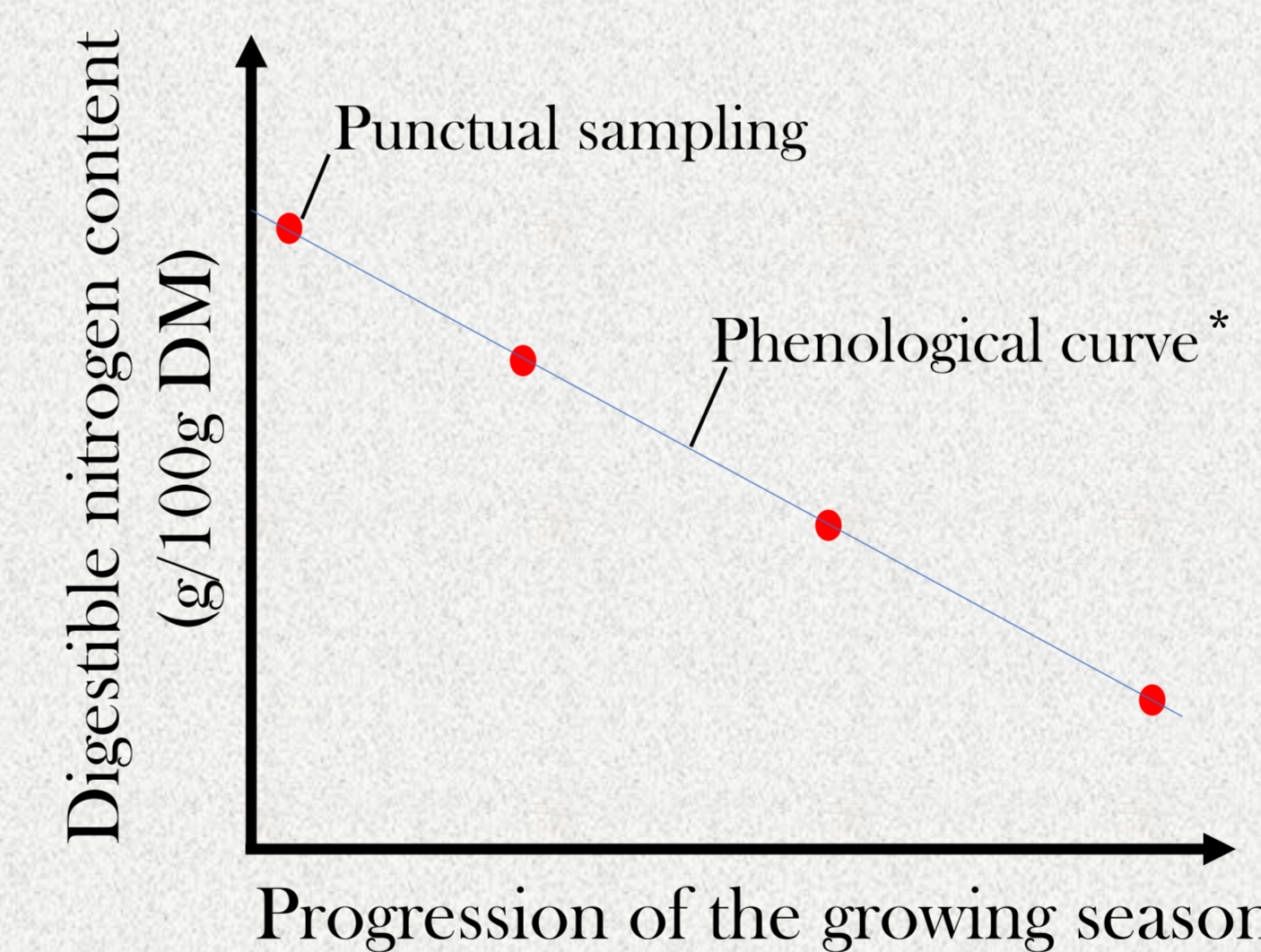


The snow fence treatment is warming up the soil above the -10° C threshold in winter (Obj. 1), which enable microbial activity to occur all year long

Figure 1. Soil temperature between October 2016 and October 2017 in one site, for the snow fence treatment (red line) and control (blue line)

## 5. WHAT'S UP NEXT: ESTIMATE PHENOLOGY OF DIGESTIBLE NITROGEN

- ❖ Monitoring and sampling during summer 2018
- ❖ Establish phenological curves for digestible nitrogen content estimated from crude N - fibre - phenols (Obj.2)



- One sampling = one point on the time curve
- Using continuous data from NDVI sensors, we will increase the temporal resolution of the phenological curve (Obj. 3)

\*this curve has been simplified to explain the concept

