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Chiara Saporiti, Thomas Dias, Claire Morillon, Jérémy Grenier, Najat Bhiry,  
Armelle Decaulne

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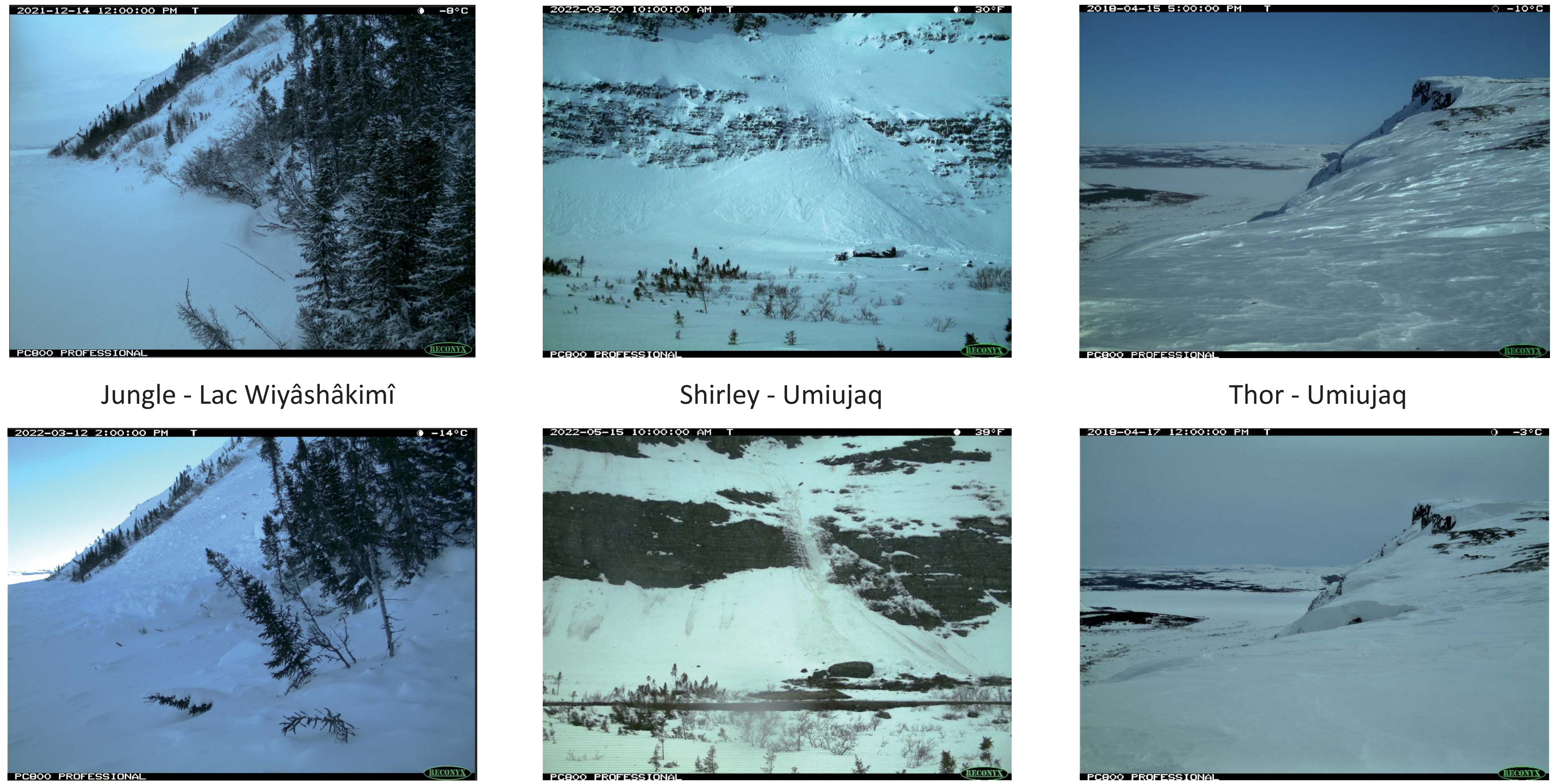
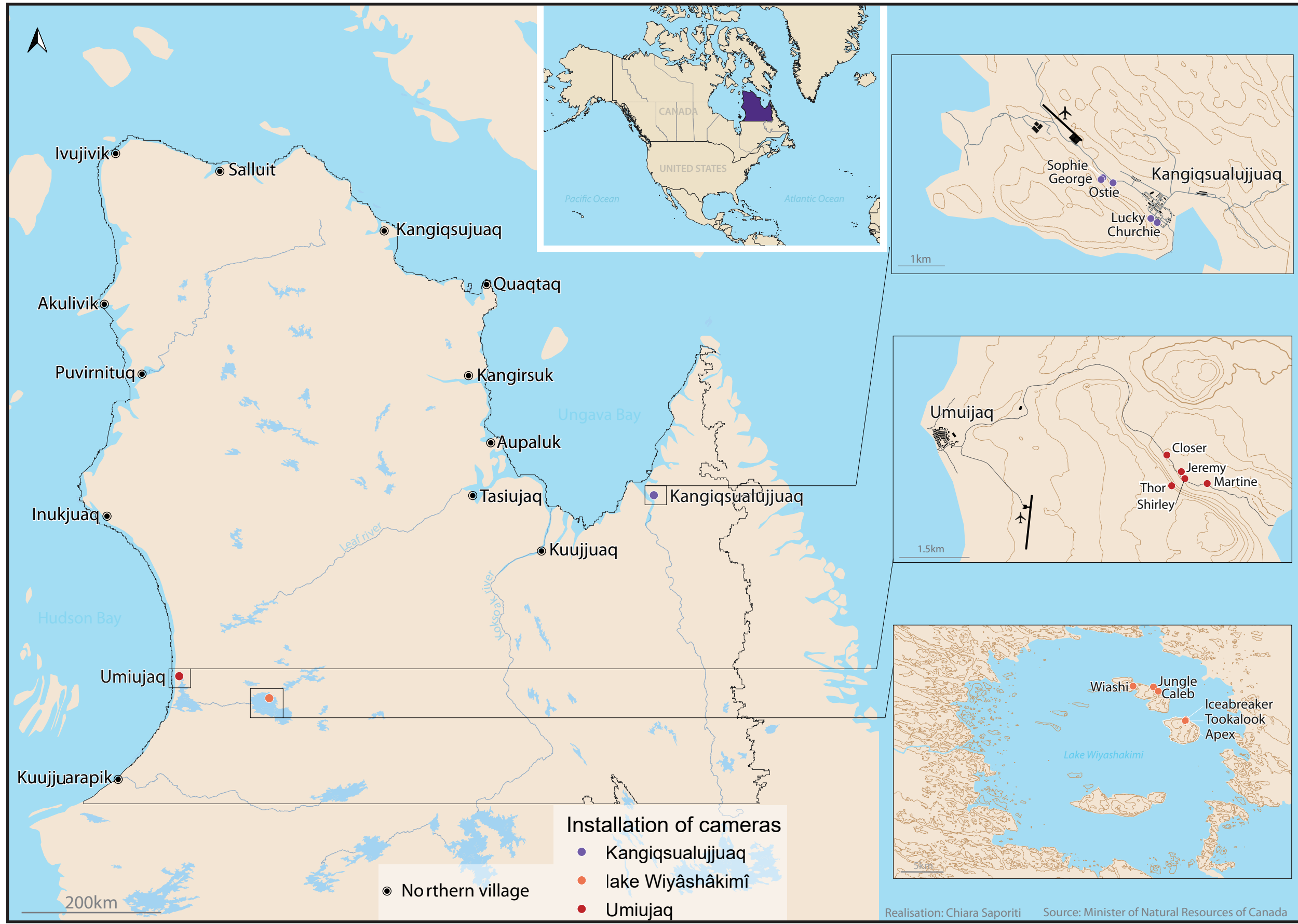
# Towards a portrait of avalanche hazard in Nunavik

Chiara Saporiti<sup>1,5</sup>, Claire Morillon<sup>2,5</sup>, Jérémy Grenier<sup>3,4</sup>, Najat Bhiry<sup>3,4</sup>, Beatriz Funatsu<sup>5</sup>, Armelle Decaulne<sup>5</sup>

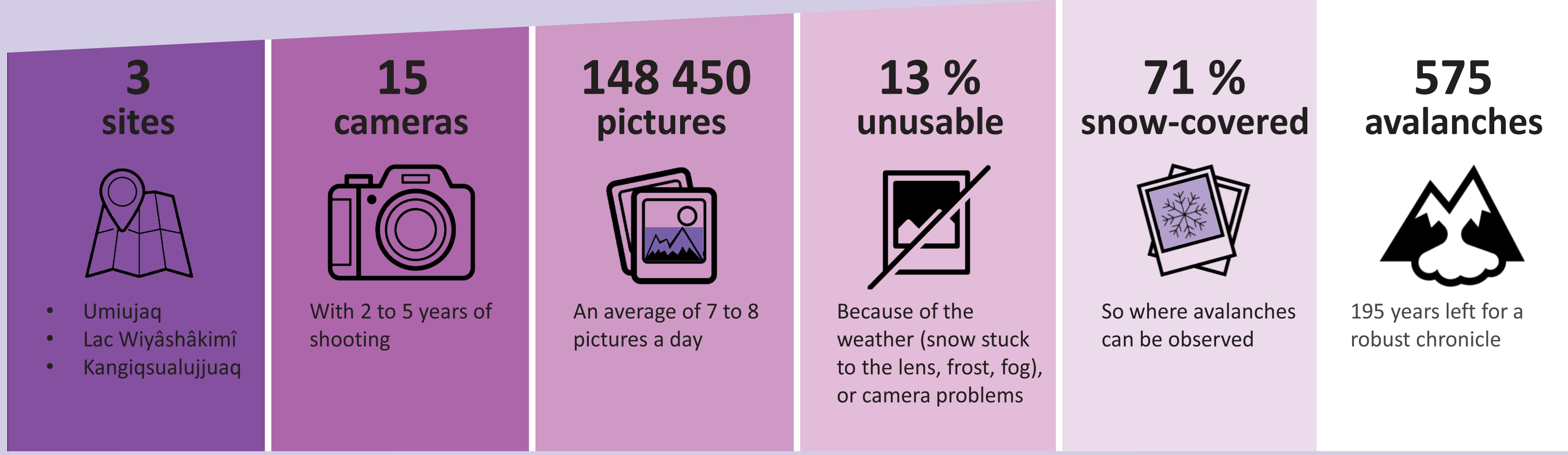
<sup>1</sup> University Paris 1 Panthéon Sorbonne, Paris, France, <sup>2</sup> University Jean Moulin Lyon 3, Lyon, France, <sup>3</sup> University Laval, Quebec, Canada, <sup>4</sup> Centre d'études nordiques, Quebec, Canada, <sup>5</sup> CNRS LETG, Nantes, France



## GENERAL CONTEXT



## DATA IN FIGURES



**January 1999**, a deadly avalanche occurred in the village of Kangiqsualujuaq (northern east Nunavik): 9 people killed (including 5 children), 25 injured. This tragic event led to the gradual awareness of local population and scientific community on the avalanche risk in the northern Quebec region.

Since 2015, a team from OHMI-Nunavik is interested in studying slope dynamics at different sites.

3 sites were chosen and were equipped in 2017 with automatic time-lapse cameras (type Reconyx™ Hyper Fire2):

- Umiujaq,
- Wiyâshâkimî meteorite crater lake,
- Kangiqsualujuaq.

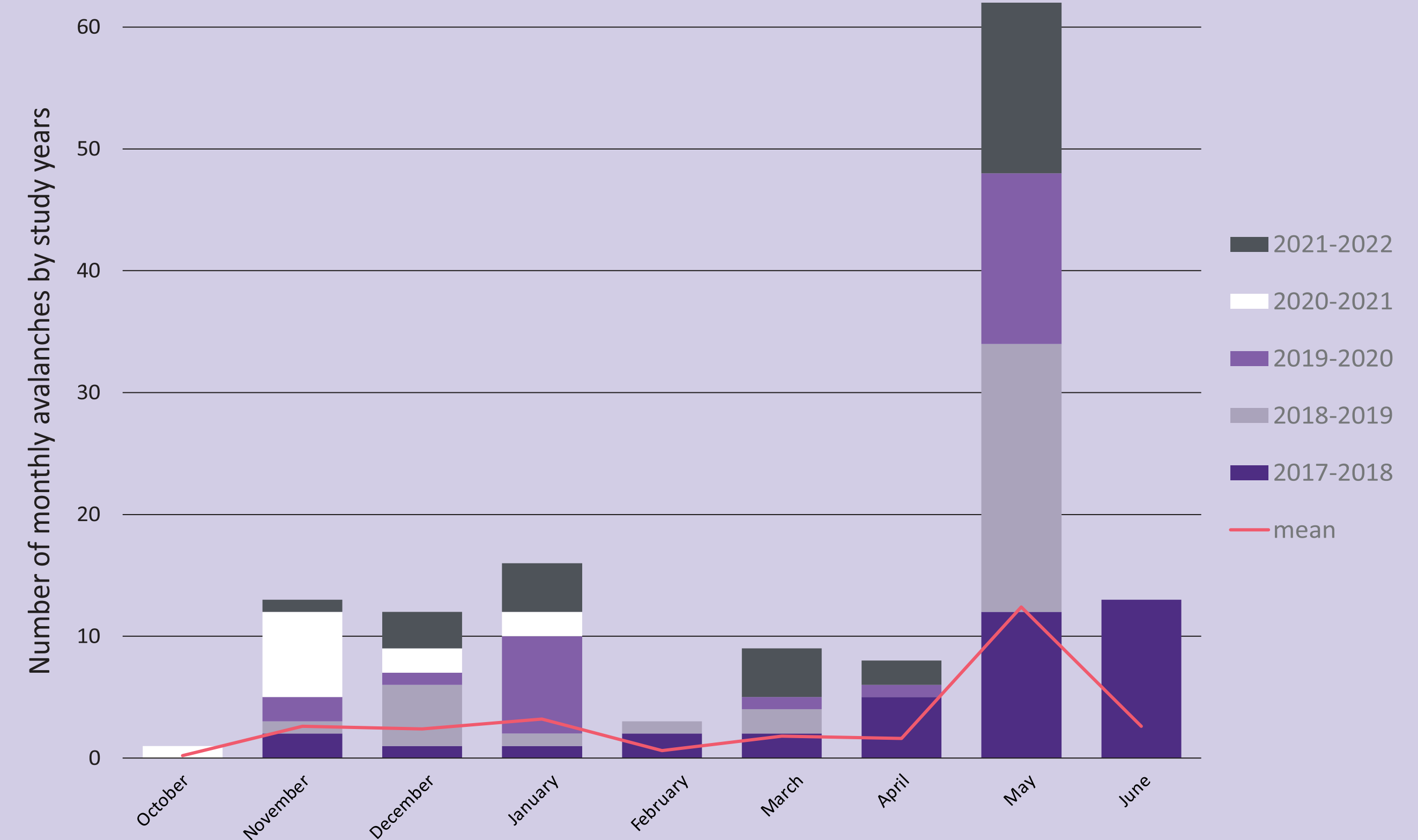
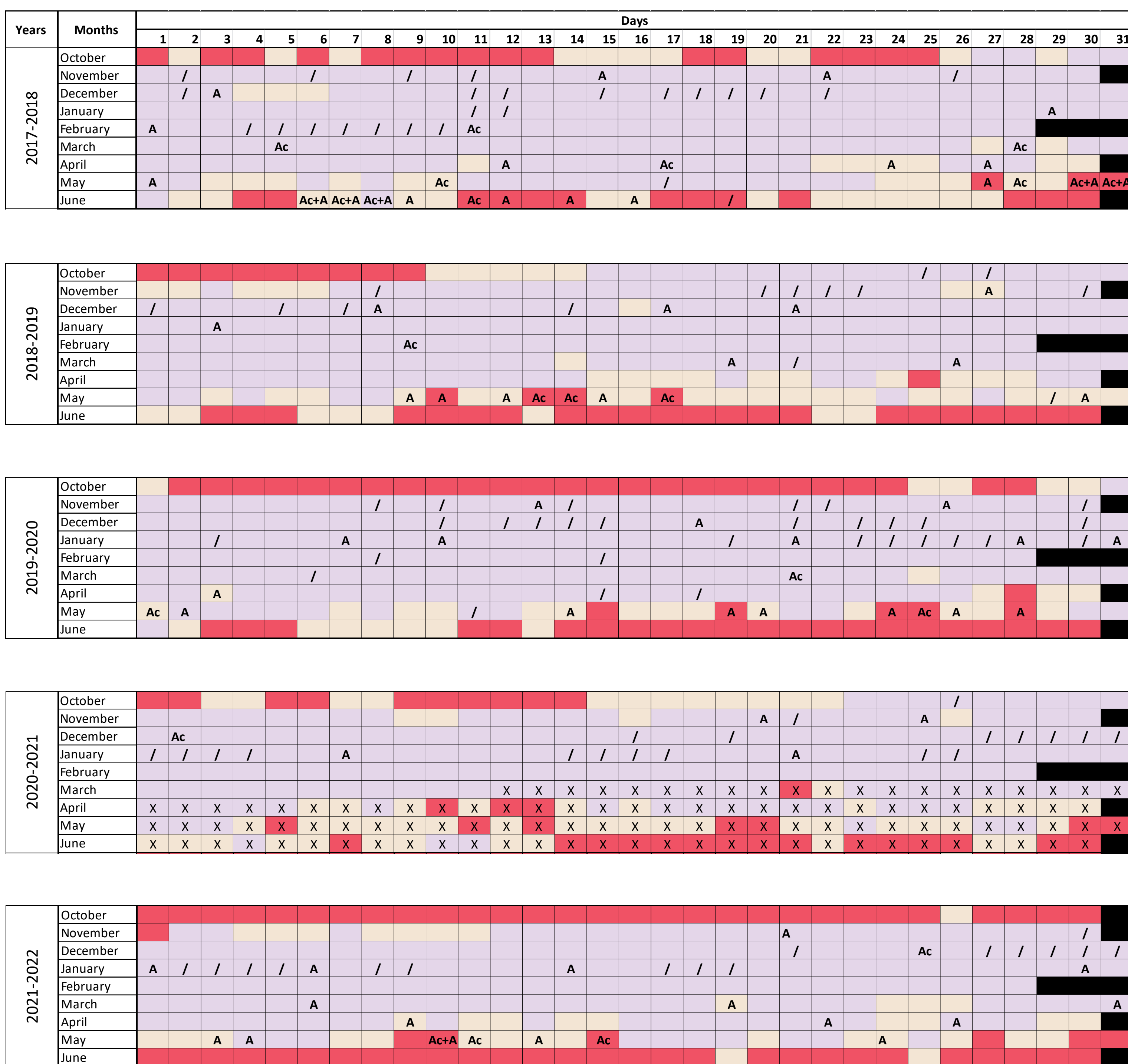
Operating year-round and recording pictures every hour, for an average of 7 hours per day, these cameras have helped to identify avalanche paths and avalanche occurrences.

These sites were chosen because of the presence of the avalanche hazard and its potential impact on the local population.

For Umiujaq and the Wiyâshâkimî lake, recent development of tourist activities in the national park Tursujuq, established in 2013, led to more traffic on local roads, especially during spring, season of high frequency avalanches with potential important runout.

- The avalanche deposits visible on the pictures enable to establish:
- a winter and spring calendar of occurrence,
  - an estimate of runout distances,
  - the delimitation of the contours of avalanches,
  - weather conditions during the triggering phase.

## ZOOM ON CAMERA SHIRLEY OPERATING SINCE 2017

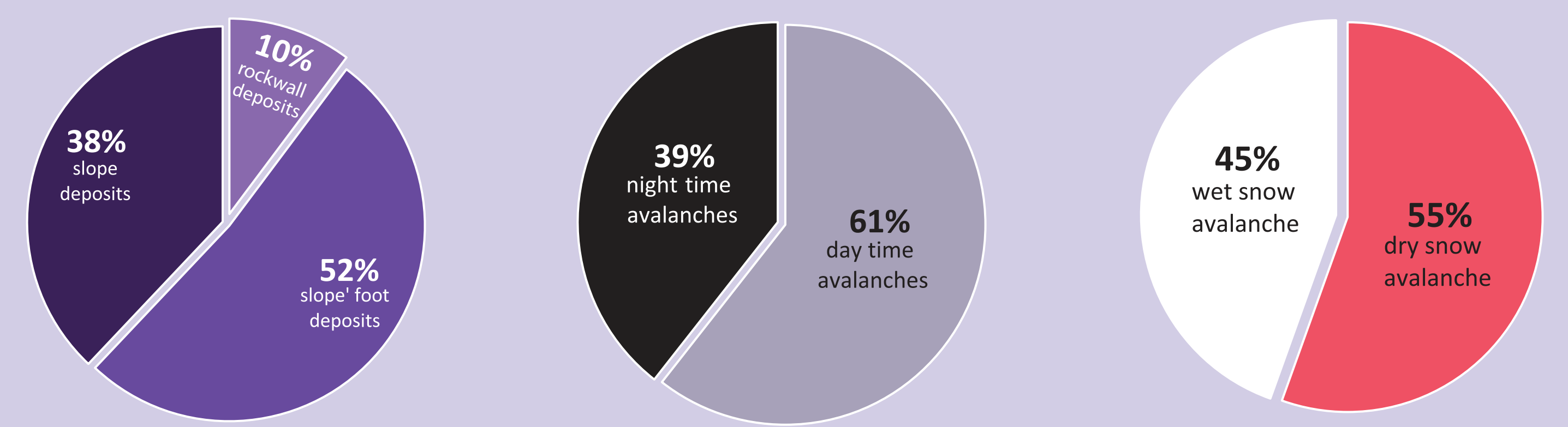


Shirley camera, located in the site of Umiujaq, captured the most active avalanche paths since 2017, recording a total of 137 avalanches in 5 years.

The travel distance is used to estimate whether the avalanche hazard represents a risk to human activities. On Shirley, more than 50% of the observed avalanche deposits extended to distal slope, at the foot of the slope, beyond the 10% inflection point.

Winter and spring calendars enable a first correlation of temperature variations and occurrence of avalanches:

- avalanches are mostly triggered following an increase in temperature in previous days. It explains the monthly occurrence in May, as the daily temperature becomes mostly positive.
- daily temperature variations also trigger avalanche events as they occurred during day time, the time during which the population is more likely to frequent these areas



Seasons		Avalanches		Data not usable		
Strictly positive daily temperature	Strictly negative daily temperature	Both positive and negative daily temperature	A	Ac	X	/
			Avalanche day		Data not usable due to a breakdown or theft	
			Cornice avalanche day		Data not usable due to weather conditions	