

Proglacial zone dynamics revealed with high resolution UAV-based mapping in 2021 and 2023, Renard Glacier, Svalbard

Supplementary material for the Polish Polar Research article on proglacial zone dynamics of Renard Glacier (Recherchefjorden, Bellsund, Spitsbergen). Contains figures documenting monthly air temperatures (Akseløya, YR.no, 2021 & 2023), GCP positioning parameters, transect frequency distributions and morphological transformation of moraine features. Source data: UAV surveys (2021, 2023; XXXI UMCS Polar Expedition 2023), processed in Agisoft Metashape Pro to a 0.1 m/px DEM and orthophotomap.

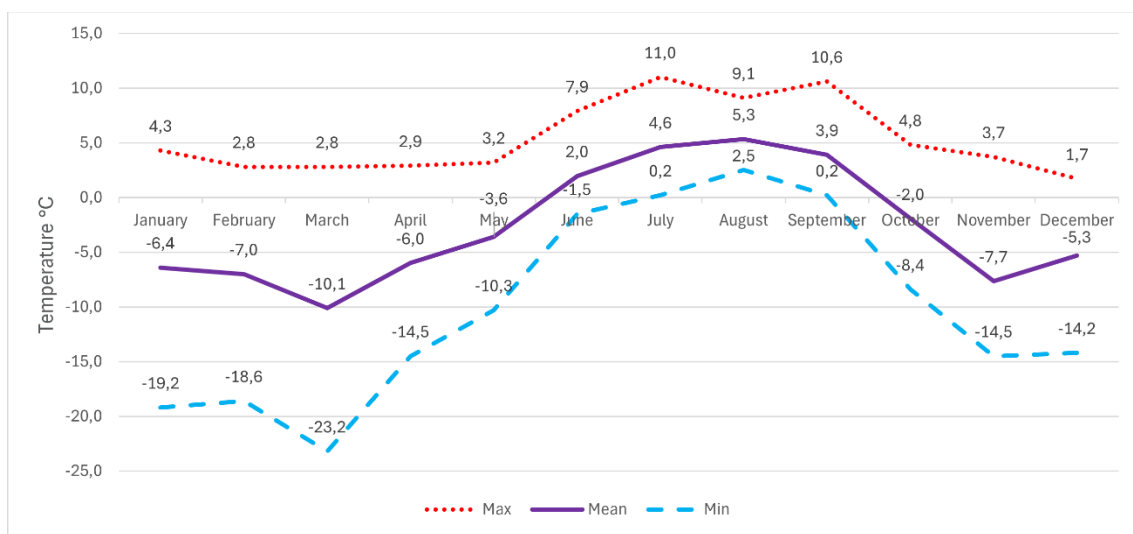


Fig. S1. Monthly temperature characteristics for the 2021 observation period from Akseløya Meteorological Station (YR.no) showing maximum (dotted red line), mean (solid purple line) and minimum (dashed blue line) temperatures in °C (2025).

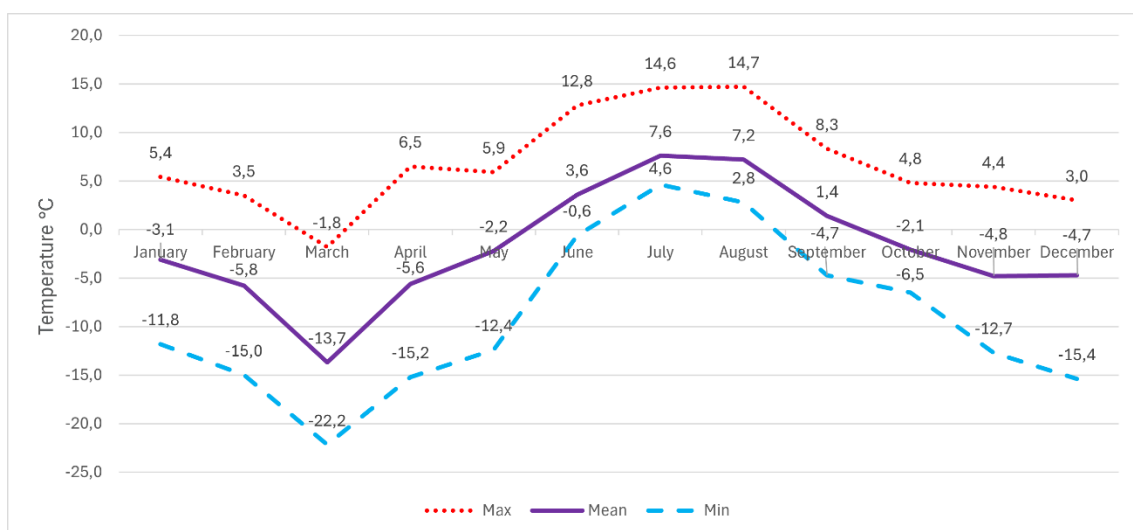


Fig. S2. Monthly temperature characteristics for the 2023 observation period from Akseloya Meteorological Station (YR.no) showing maximum (dotted red line), mean (solid purple line) and minimum (dashed blue line) temperatures in °C (2025).



Fig. S3. Example of positioning parameters during GCP measurement in the Renard Glacier forefield (2023).

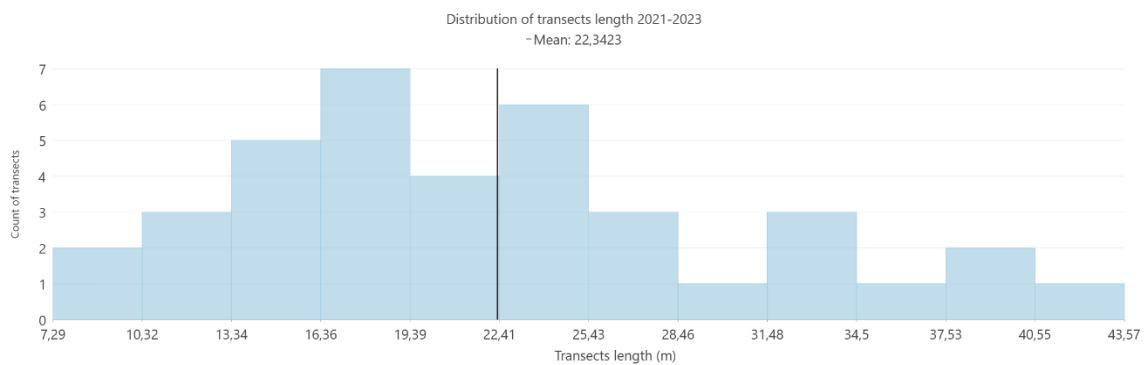


Fig. S4. Frequency distribution of transects (2021 - 2023). Chart represents 36 transects with 90 m intervals (2025).

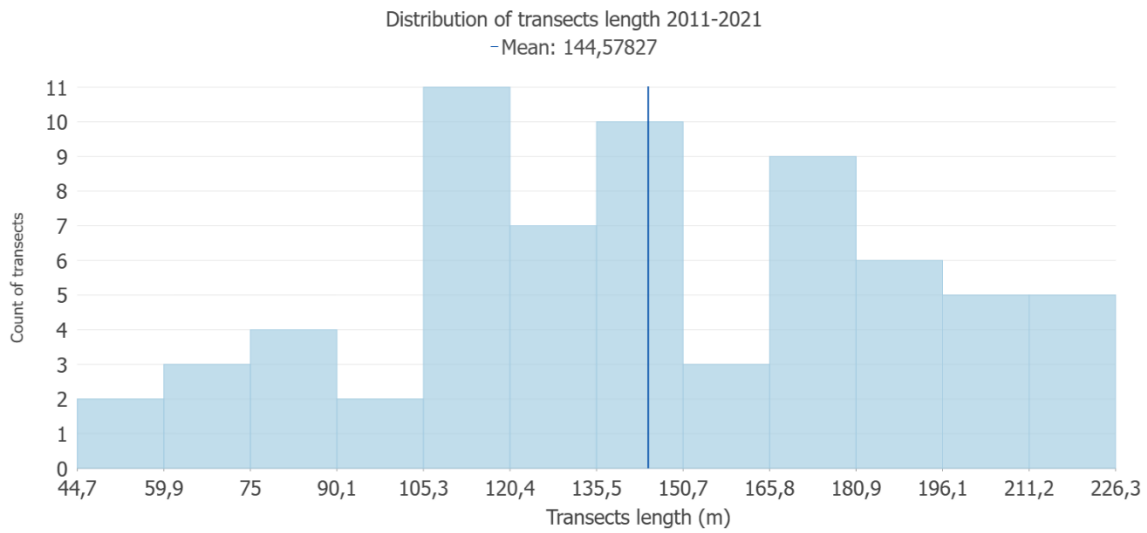


Fig. S5. Frequency distribution of transects (2011-2021). Chart represents 67 transects with 40 m intervals (2025).



Fig. S6. Morphological transformation of moraine feature (2021 red polygon -2023 orange polygon). (The additional map in the central part shows the glacier forefield, while the red square represents the exact extent of the area being depicted.) (2025)