



Late Cenozoic development of the continental margin off Lofoten-Vesterålen and Troms

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Outline

- General overview Ph.D. project
- Study area
- Current work – preliminary results



General overview Ph.D. project

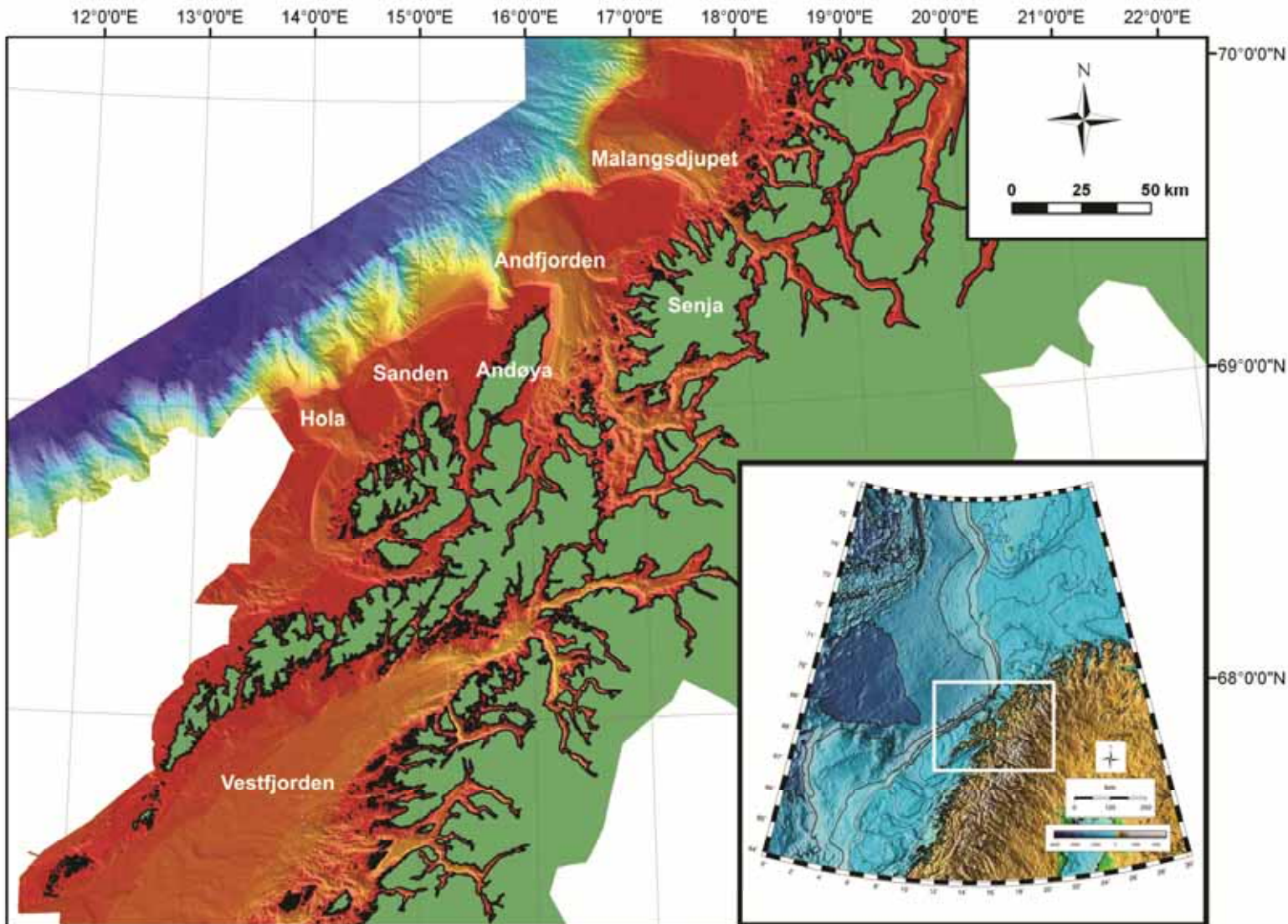
- Sponsors
 - Front Exploration
 - Norwegian Research Council (Norges forskningsråd)



General overview Ph.D. project

- Main goal:
 - “Achieve a better understanding of the Late Cenozoic development of the continental margin off Lofoten-Vesterålen and Troms”
- Sub-goals includes the study and elucidation of:
 - 1) quantification of the erosion and uplift of the hinterland
 - 2) quantification of the sedimentation rates on the outer margin
 - 3) reconstruction of the late Cenozoic glacial history
 - 4) understanding of the pockmark distribution

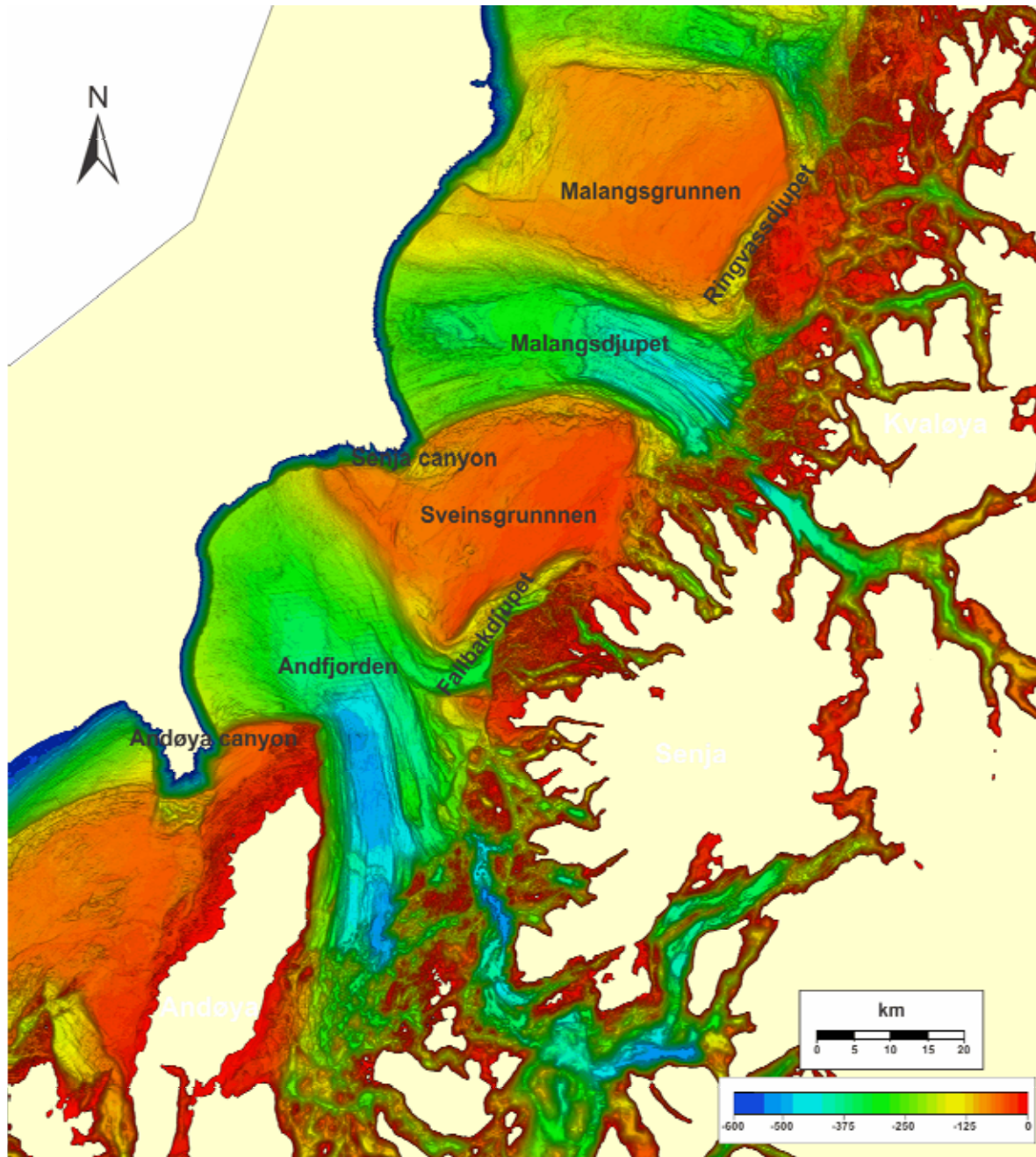




Current work – Preliminary results

- Preliminary title: "Shelf geomorphology off Troms"

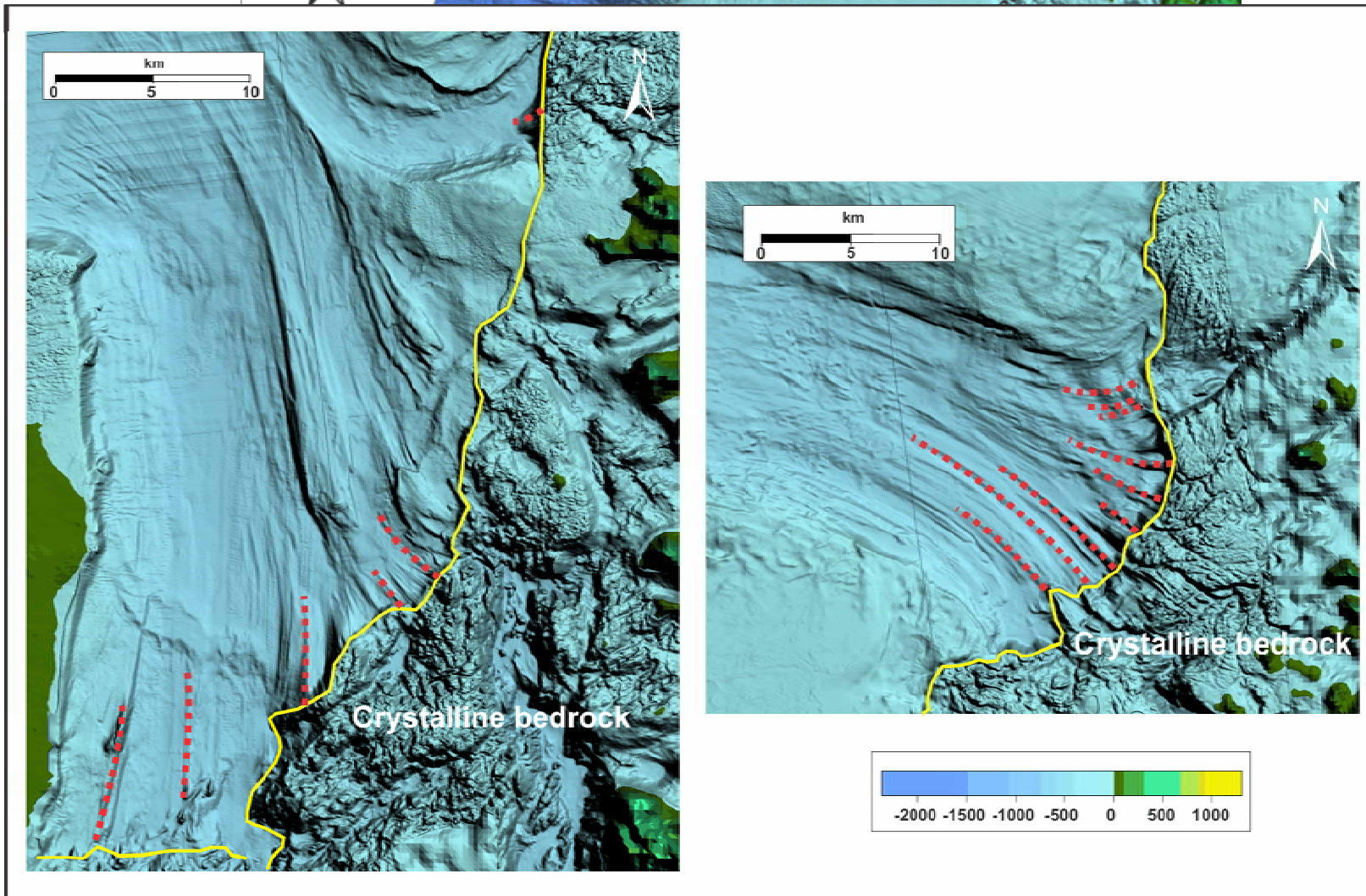
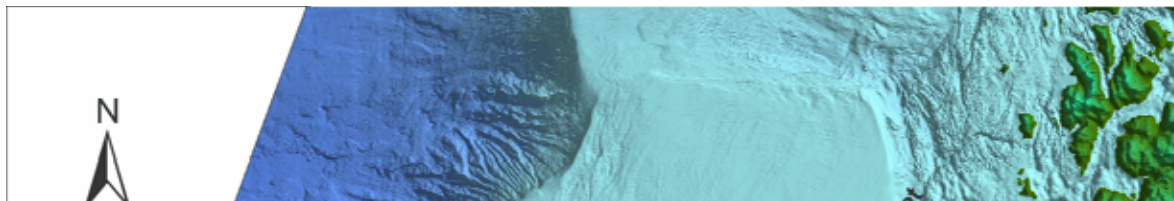




Glacial landforms

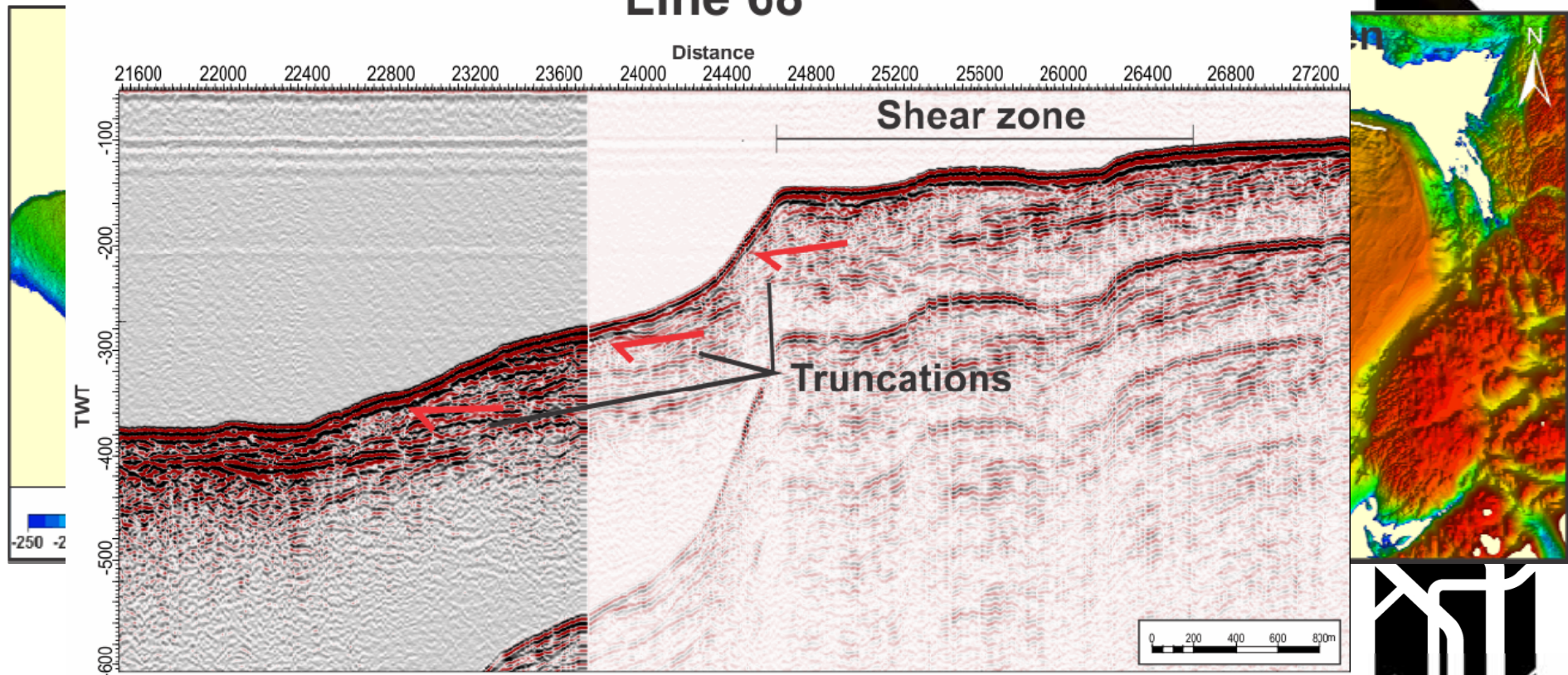
- Mega scale glacial lineations (MSGGL)
- Lateral shear zone moraines (LSZM)
- Moraine ridges
- Arched ridges



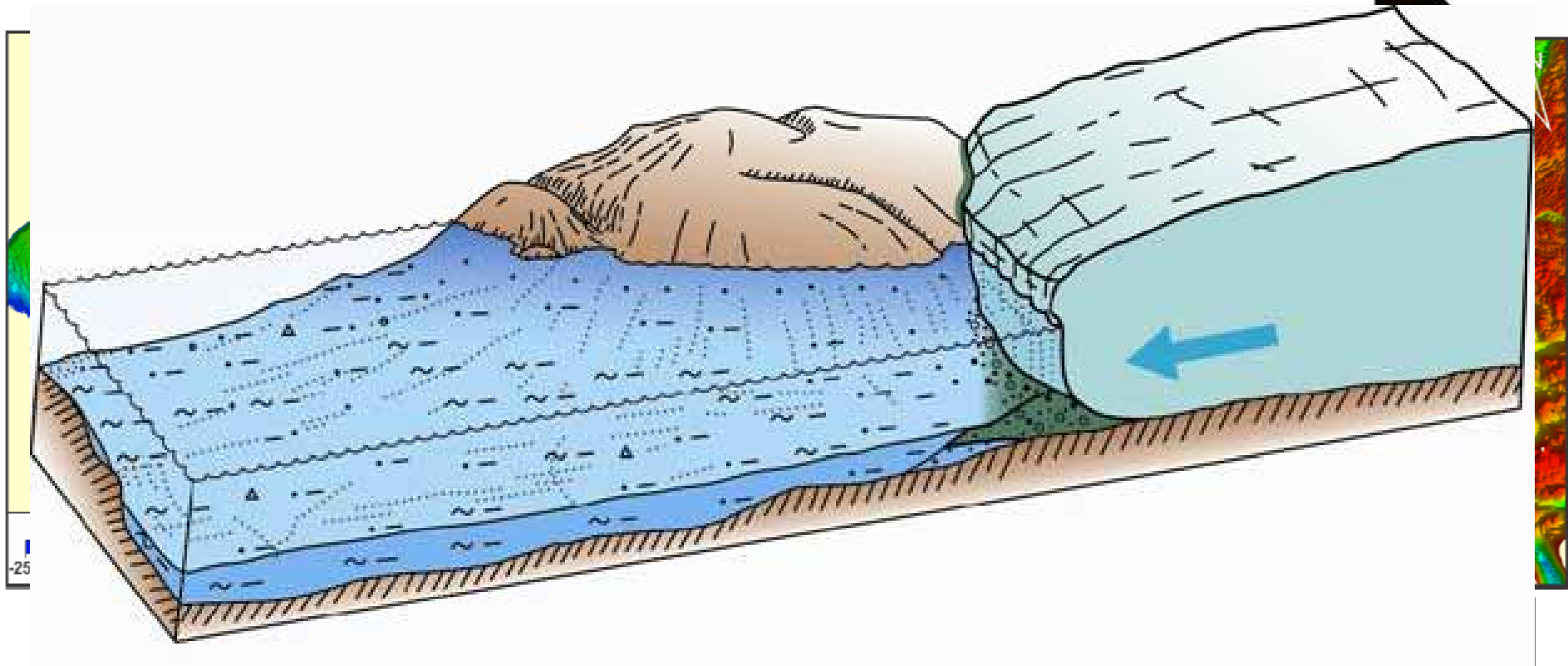


Lateral shear zone moraines

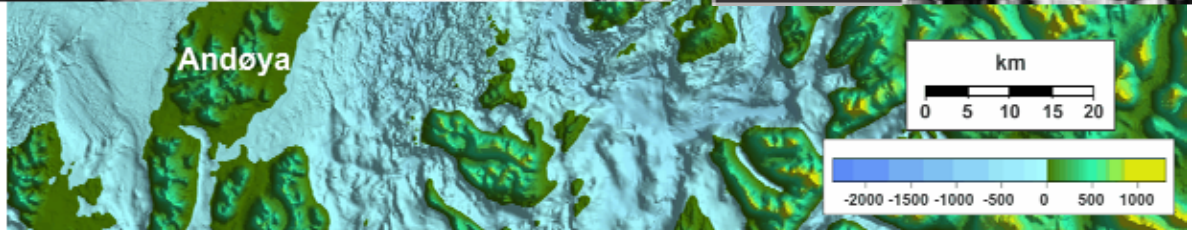
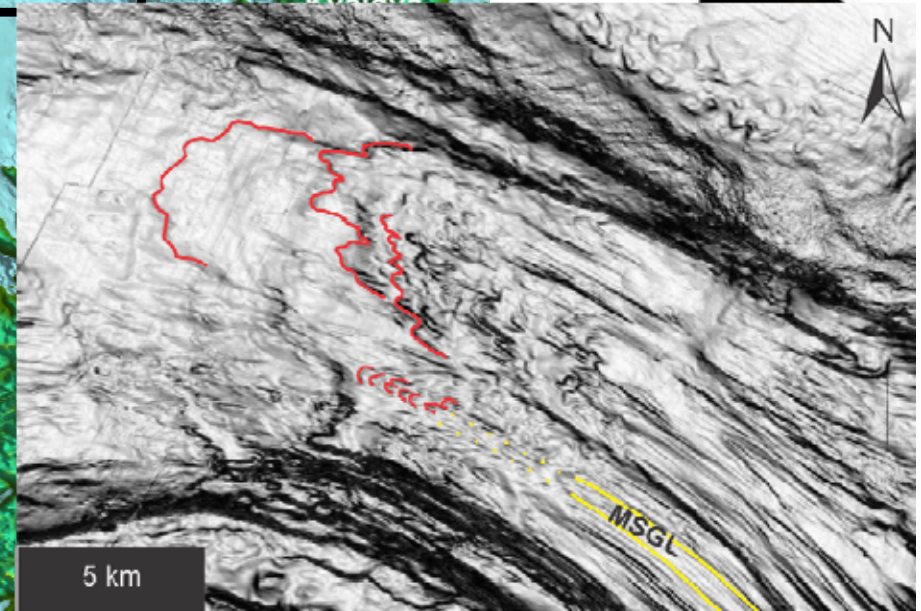
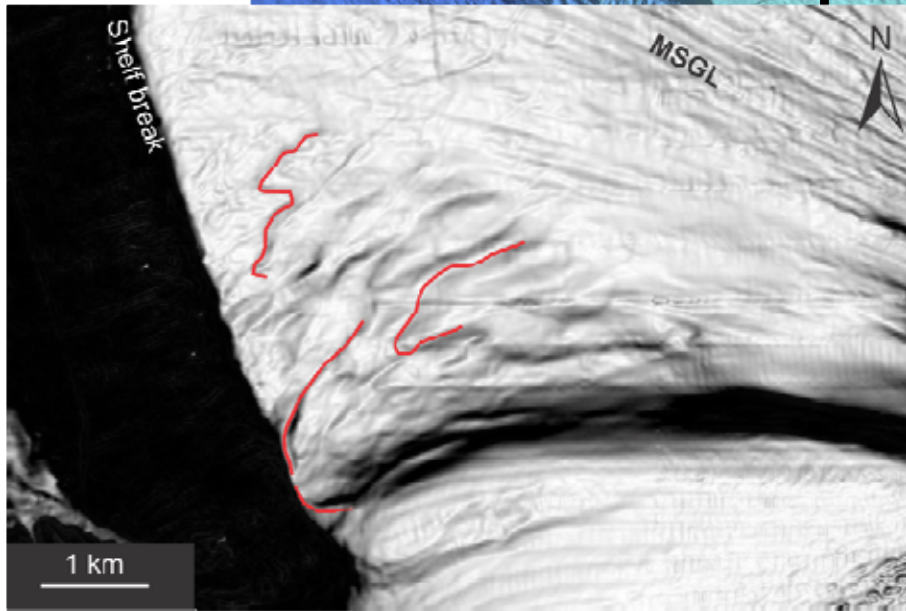
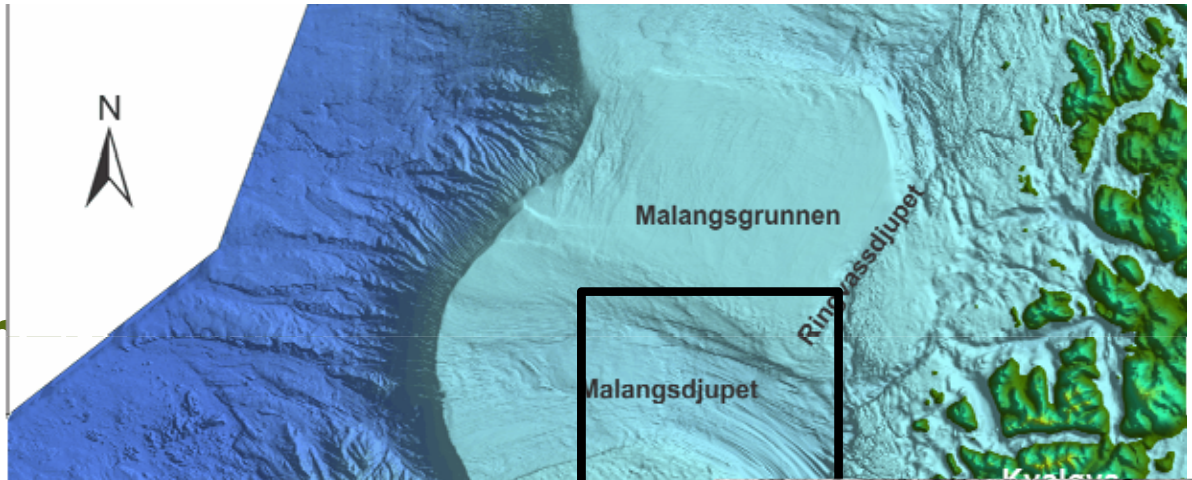
Line 68



Moraine ridges



Arch



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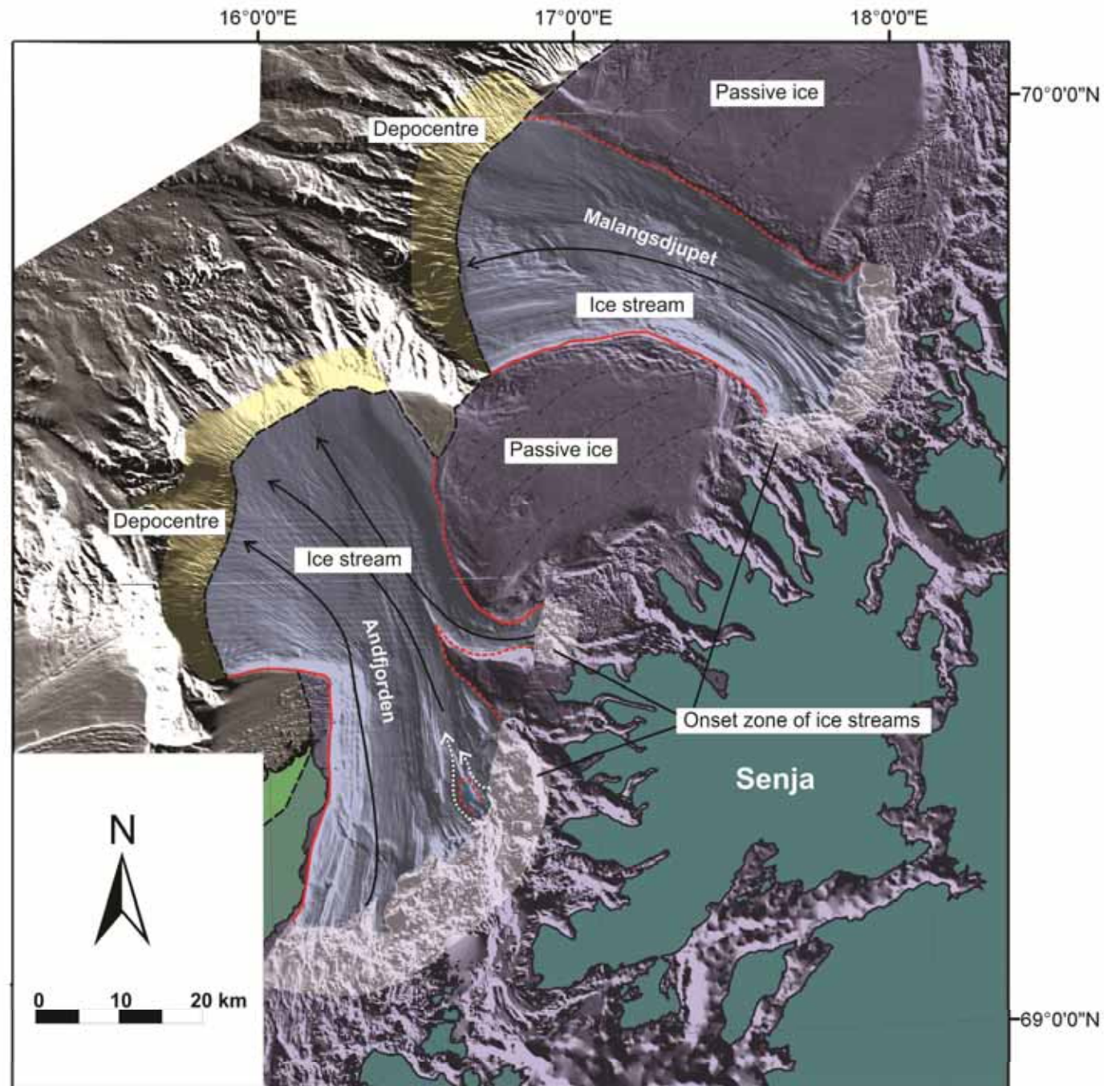


Reconstruction of palaeoenvironments

- LGM
- Deglaciation



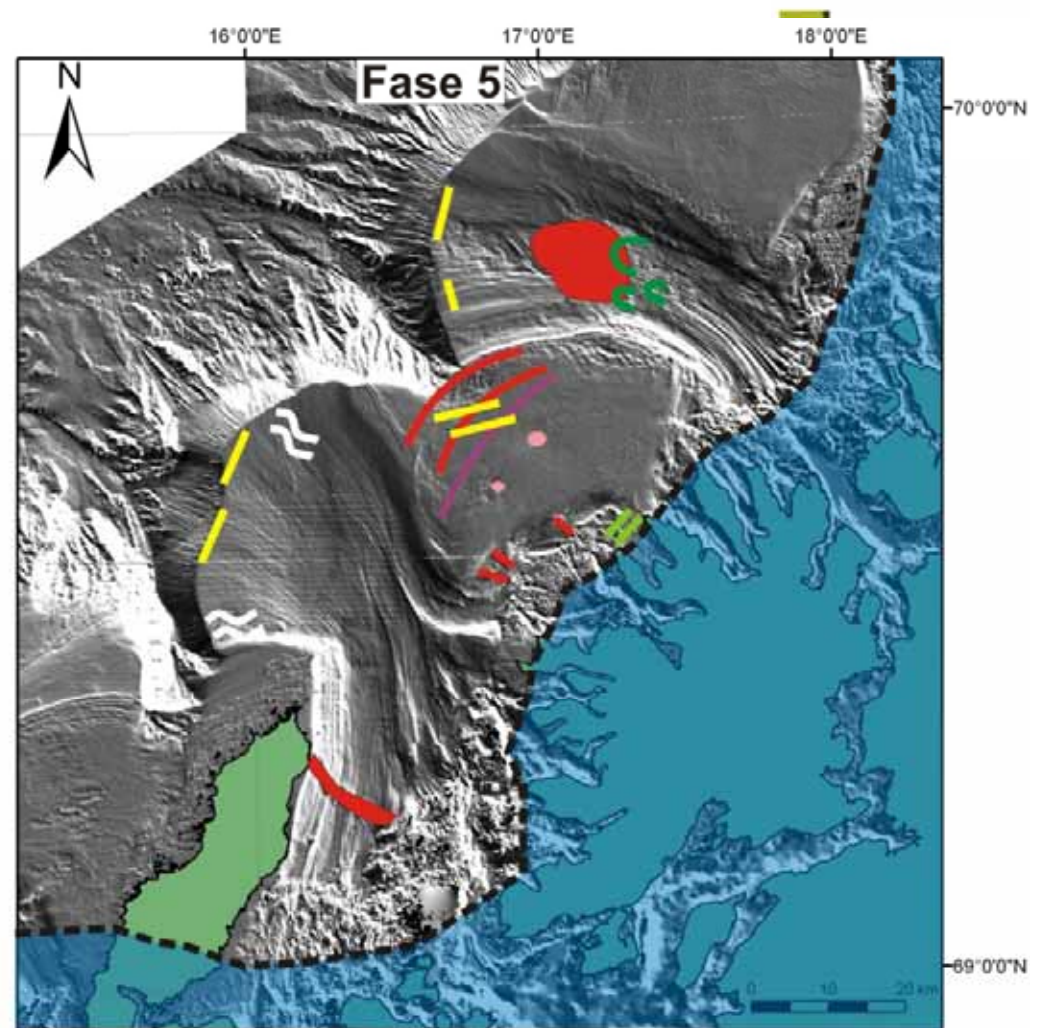
LGM



Deglaciation

Five phases

- Phase 1: Calving embayment → Curved ridges
- Phase 2: Major end moraines
- Phase 3: Glacier advance → Arched ridges cross-cutting moraines
- Phase 4: Iceberg plough marks
- Phase 5: De Geer moraines



Summary

- Troughs: Landforms characteristic of fast-flowing ice streams (LGM) + landforms indicating halts/readvances during the deglaciation
- Banks : Landforms oriented transverse to inferred ice flow (deglaciation). Some cross-cutting of landforms is observed : may indicate smaller readvances during the deglaciation.
- The transition areas between the troughs and banks are marked by slightly irregular and semi-longitudinal ridges inferred to be lateral shear zone moraines formed mainly during the LGM

