

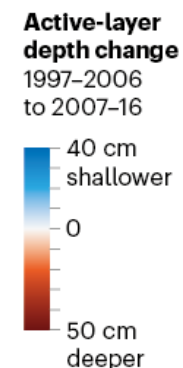
Mass Balance of the Cryosphere: Permafrost

General comments

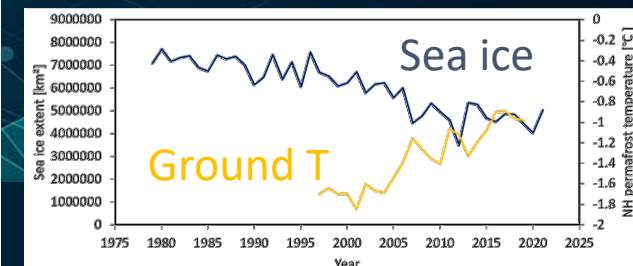
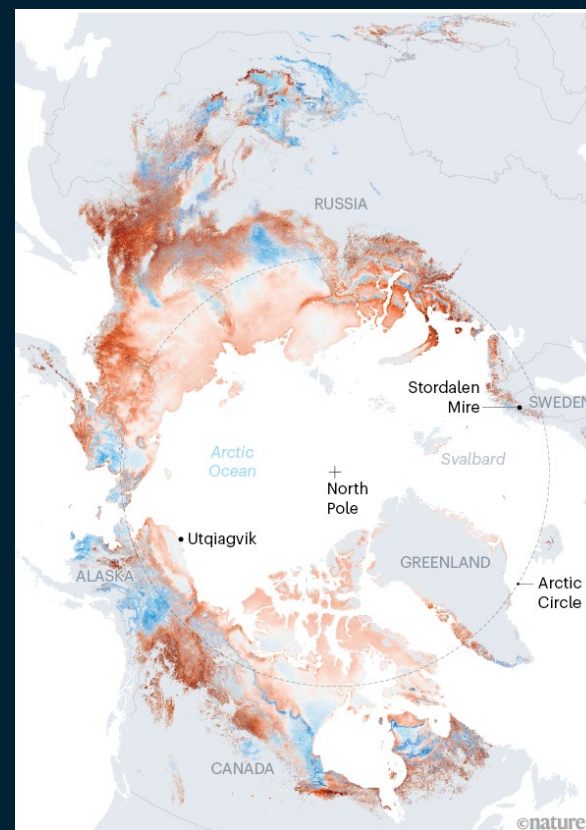
- “Mass” of Permafrost is commonly not addressed (depth is largely unknown)
- Ice does not need to be present by definition – ground with $T < 0^{\circ}\text{C}$
- Thickness of the active layer (ALT) is measured to monitor ‘upper boundary’ + Permafrost extent (usually at 2m)

Current state & challenges

- Extent and ALT modelled using land surface temperature (LST); sea water equivalent (SWE) with at least 1km resolution needed.
- InSAR as indicator for ALT & ground ice content – but little data; altimeter only in extreme cases of thermokarst



average 2.5 cm



1997

2019

