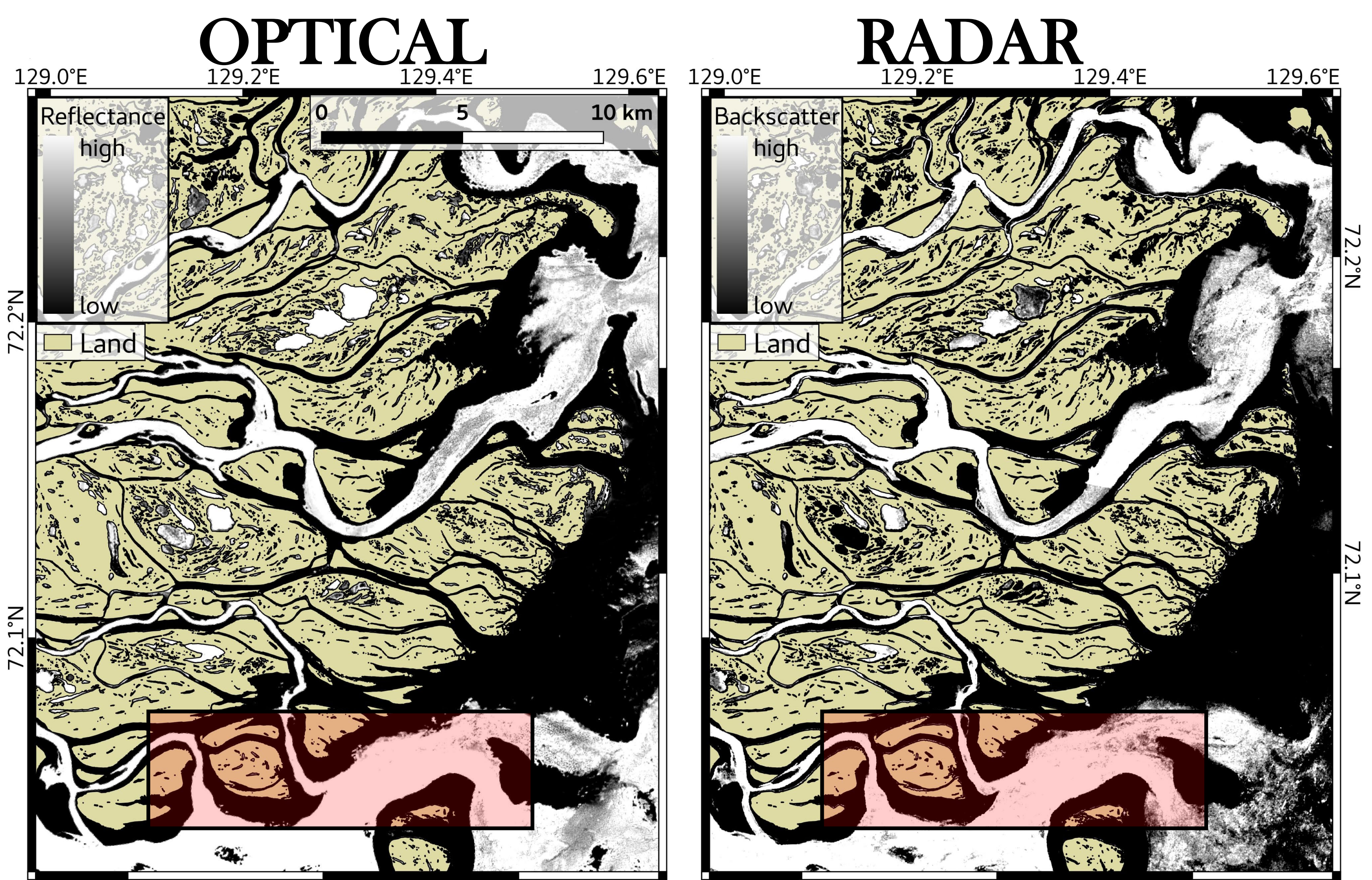


Floating Ice and Riverbed Permafrost in the Lena River Delta

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INTRO & METHODS



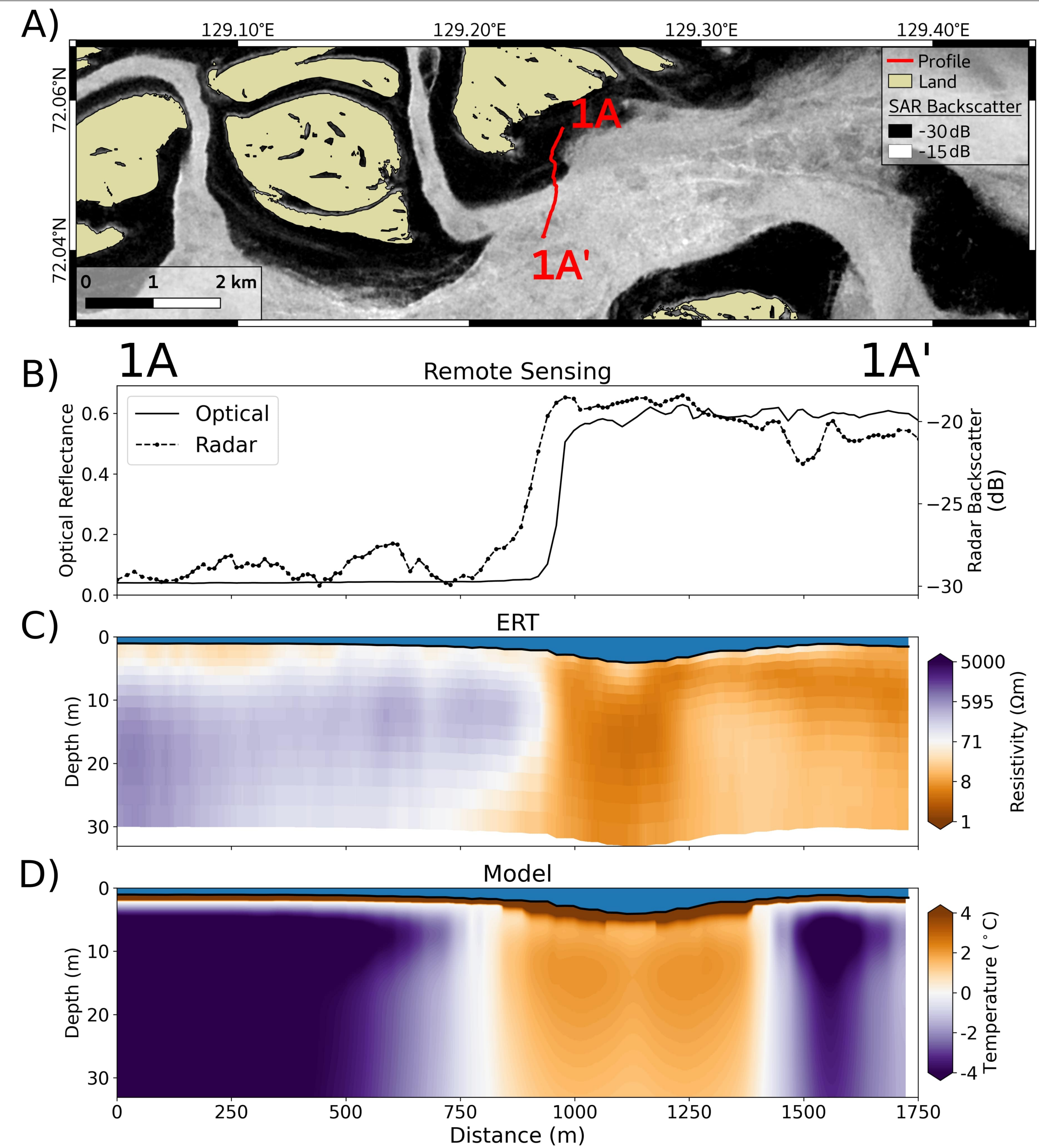
Optical (Sentinel 2, May-June) and Radar (Sentinel 1, Nov-April) imagery shows identical patterns of bright and dark regions governed by the difference between **bedfast** and **floating** river ice.

Use **numerical modeling** and **geophysical field surveys** to investigate the temperature field and sediment properties beneath the riverbed.



INTRO & METHODS

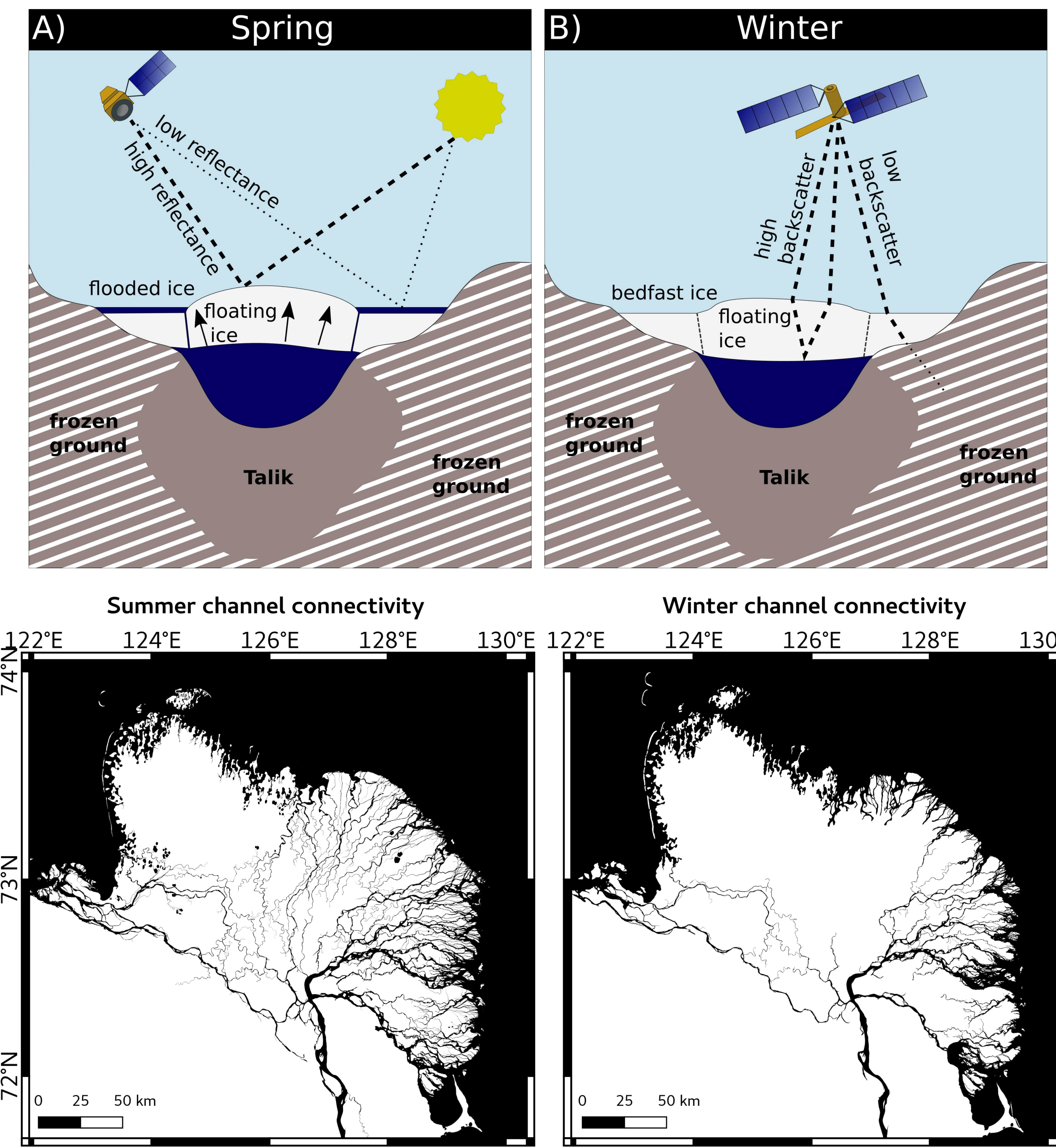
RESULTS & DISCUSSION



Floating ice regions coincided spatially with the location of **thawed riverbed sediment** observed with in situ geoelectrical measurements and simulated numerical model of heat flow through the ice, river and sediment.

The **thermal coupling** of the river bed to the atmosphere via grounded ice in winter **preserves permafrost** beneath the channel.

Remote sensing reveals seasonal changes in delta **channel connectivity** and offers provide viable information for the summer **navigation** for shallow-draught vessels



RESULTS & DISCUSSION