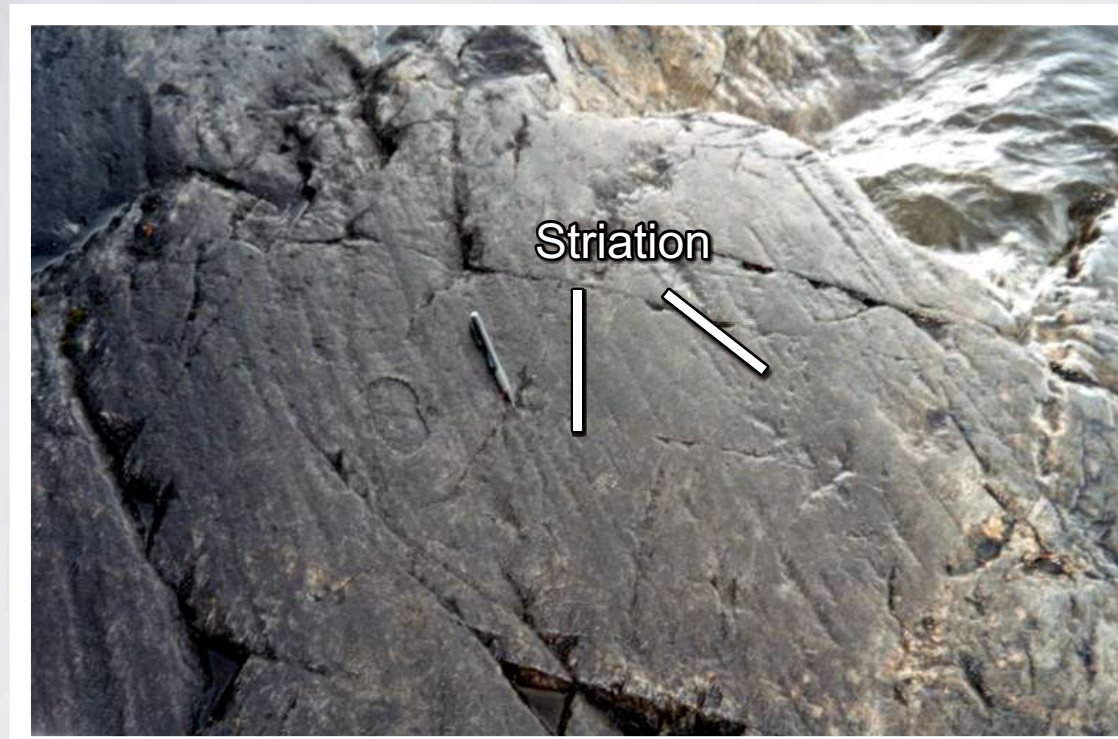


ICE FLOW MAPPING

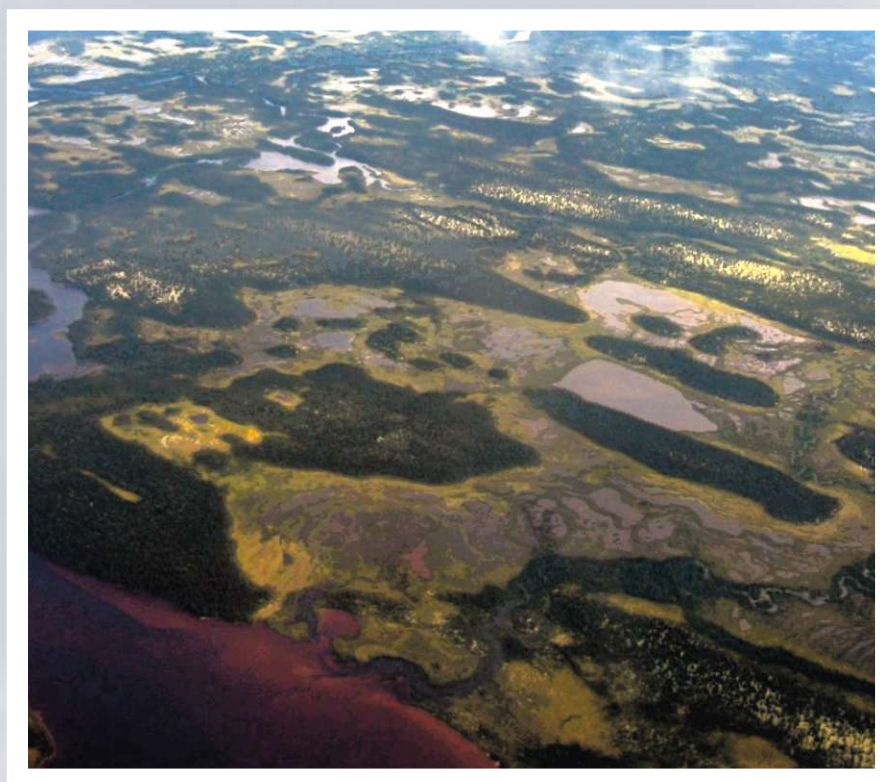
In addition to mapping sediment and landforms deposited by glaciers, determining how glaciers moved over time is fundamental for drift prospecting and mineral exploration, as it provides the foundations for interpretation and modeling glacial dispersal.

Ice Flow Features

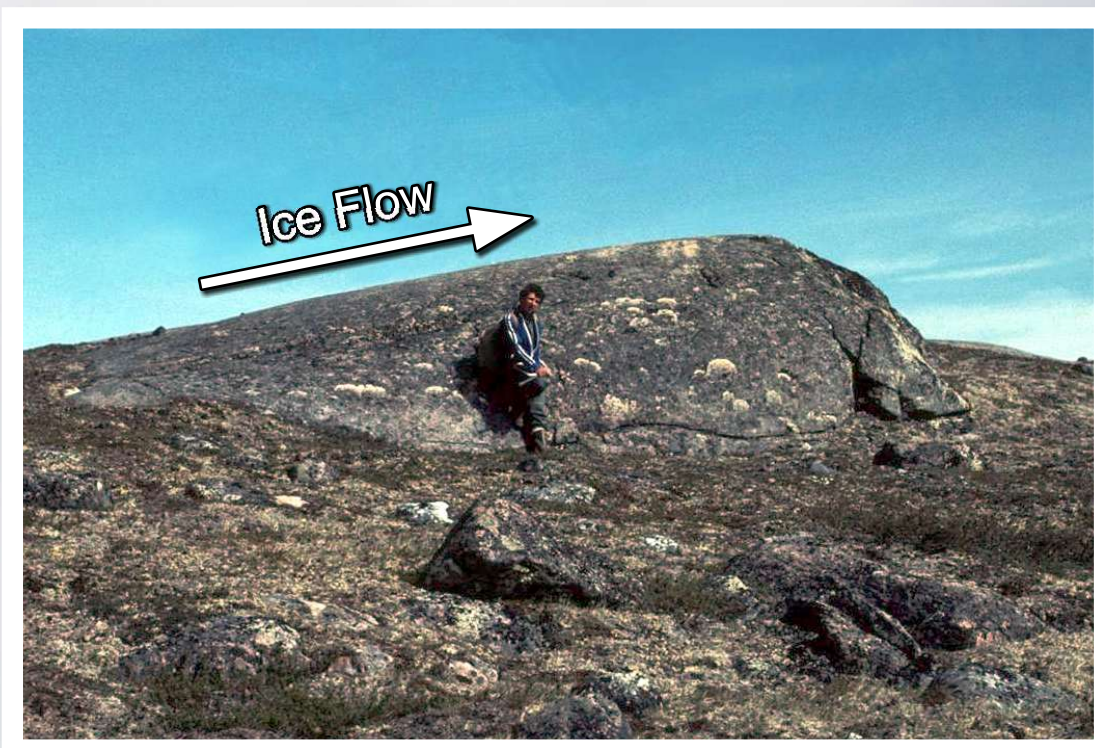
Ice-movement indicators include both small-scale features (mainly erosional) on bedrock and large scale features (depositional). Small-scale features include non-directional indicators such as striations, grooves, and chattermarks, and directional indicators such as nail head striations, lunate/crescentic fractures crescentic gouges and *rôches moutonnées*.



Glacial striation indicating that glacial ice movement was parallel to the pencil.



Large scale features are identified from aerial photographs and include flutes (above), crag-and-tail hills and drumlinoid landforms.



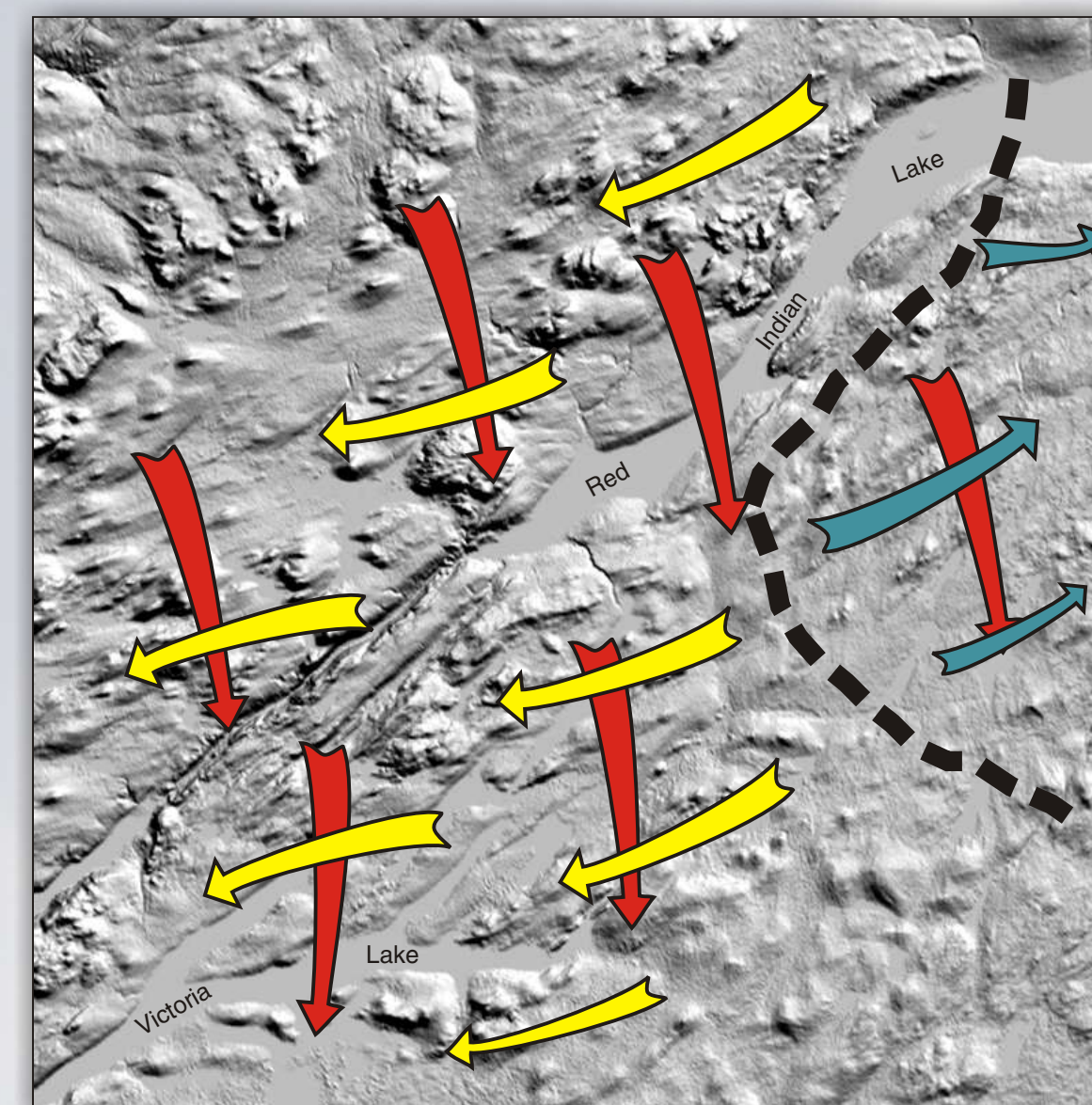
Medium-scale erosional features, such as this *rôche moutonnée*, provide information on ice flow direction.

Determining Relative Ages

The relative ages of the erosional ice-flow indicators are determined from cross-cutting relationships based on lee-side position relative to each other, superposition of indicators on streamlined landforms, and comparison to other large-scale features, moraines and overall trend of regional ice flow.



Regional patterns



Based on numerous measurements of ice flow indicators a regional pattern of ice flow can be established. In the Red Indian Lake basin (left), an early southward ice flow across the region was succeeded by a westward ice flow in the eastern part of the basin and a northeastward ice flow in the western part. On this basis, an ice divide can be inferred to have existed during the later stages of glaciation in the area.