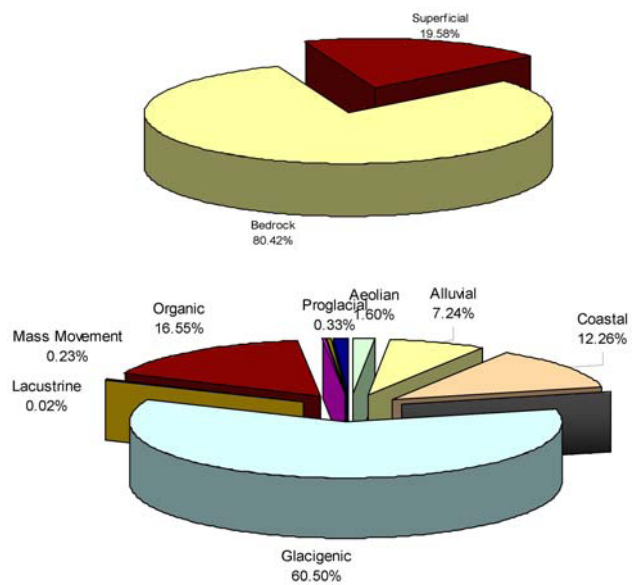


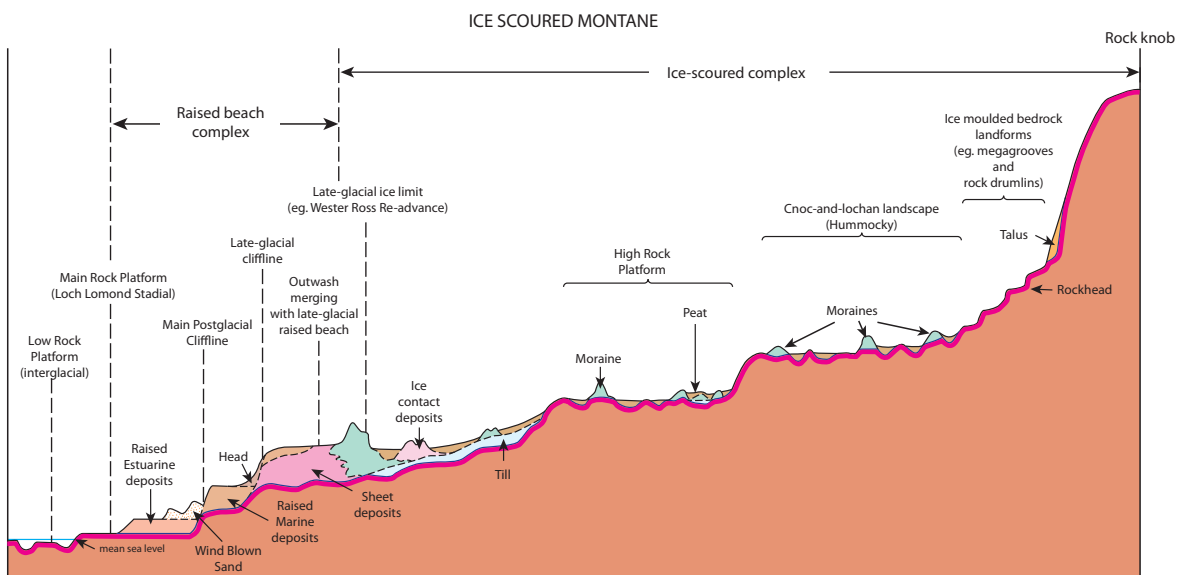
Bedrock/Superficial ratios



Superficial components

Pie chart proportions are based on an analysis of DigMapGB50 Version 2.

A schematic diagram showing elements of the ice-scoured montane domain



Background information for project planning:

Landforms, deposits and processes

This domain is largely devoid of superficial deposits (~20%) as it has experienced severe, widespread glacial erosion. Soil is thin or non-existent. The most characteristic landforms are ice-scoured and sculptured knock-and-lochan terrain, fjords and strandflats. Some mountains are included, with huge rugged corries and mountaintop blockfields.

Outcrops of till are sparse; the till is typically little weathered, extremely bouldery and contains much comminuted rock. Morainic deposits are commonly not distinguished from till

on existing maps; they are also typically boulder-rich and form recessional ridges and hummocky ground within valleys. Glaciofluvial deposits are sparse, apart from where they merge with raised beaches.

Raised shorelines, beaches and wave-cut platforms are very common along the coasts. They occur as two distinct sets: Late Devensian and Holocene. The older set is locally associated with glaciofluvial deltaic deposits, which are important resources of sand and gravel.

Paraglacial and periglacial processes modified the landscape immediately following deglaciation, and marine processes affected the coasts during periods of high sea level. The occurrence of deeply weathered and decomposed bedrock is minimal. Active processes on higher ground include rock topples, debris flow, landslips and other gravitational mass movement processes. Large landslips are uncommon. Fluvial erosion and deposition is confined to narrow alluvial tracts in the valley bottoms. Ice-scoured hollows are ubiquitous on lower ground, and are generally filled with highly compressible deposits of peat, silt and clay. A wide range of coastal processes are in operation, and are reflected in the diverse nature of the coast, including rugged cliff lines with sea stacks, extensive sandy beaches, cobbly storm beaches and tombolos.

For mapping guidance:

Primary approach

Office-based information search and landform analysis followed by a preliminary field visit to confirm model and appropriate methodologies. The relative abundance of exposed rock, absence of woodland and minimal cultivation allows this domain to be mapped largely from aerial photographs, DEMs and other remote imagery. The ground coverage is highly dependent on the weather, the experience of the surveyor and the complexity of the ground; suggested daily average 5 km².

Supplementary approach

- Section logging
- Coring peat bogs
- Sampling and sample analysis
- Cosmogenic dating of large boulders and exposed rock surfaces.

Specific problems

- Shooting season from early July to November on some estates
- Vast expanses of remote, relatively inaccessible, rugged ground with few footbridges.
- Some tracks accessible by four-wheel drive vehicles, but long days on foot cannot be avoided.
- In some sub-domains, distance from the main office and from field accommodation will constrain 'time on the ground'.
- 10-day working week practice may be needed.
- Overnight stays in bothies unavoidable.
- Poor weather can seriously affect progress.
- Health and Safety issues are paramount for lone working in this terrain. Team working practices operating a 'Buddy' system recommended. Emergency beacons and satellite phones must be provided.
- Boats commonly required for access.
- In some sub-domains, the geological and geomorphological complexity of the glaciogenic features and deposits will require ground truthing to resolve.
- Assumptions about lithologies and likely processes have to be made where mapping is based largely on geomorphological interpretation. Thus, ground truthing by way of selected traverse is important, but the terrain limits access.

An experienced team is important, or sufficient time must be allowed for expertise to be gained.