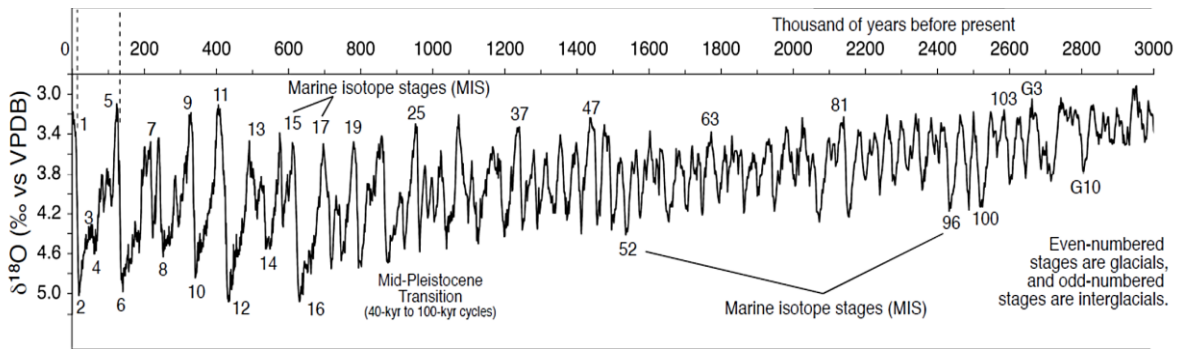
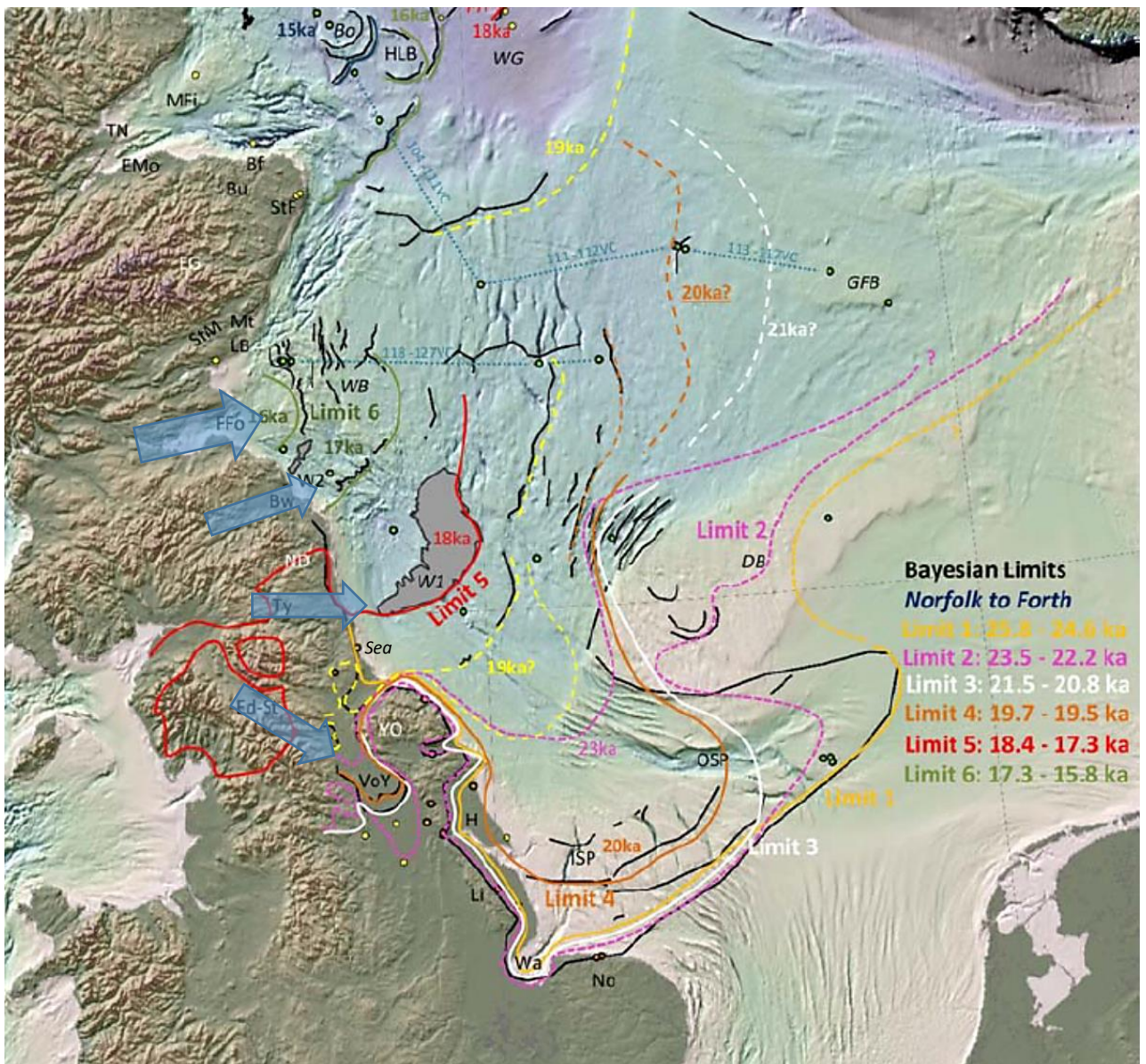


## ***Reading the Rocks Walk 1: Seaham to Ryhope- Unravelling the ice age***

The Quaternary period: The last 2.6 million yrs of Earth's history. Oscillating warm and cold climate phases. Dominated by long, cold ice ages for the last 800,000yrs

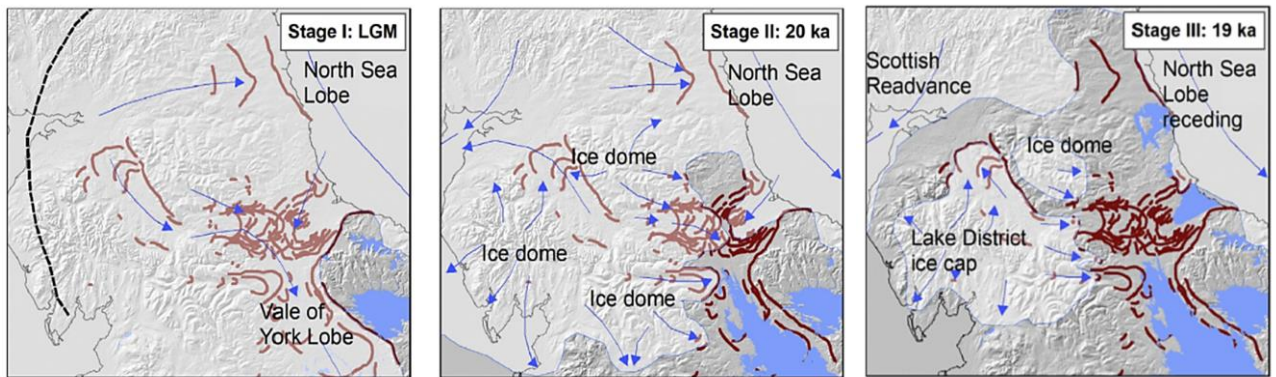


The Last glacial cycle in the UK (MIS 2): Ice sheet build-up and oscillation 31,000 – 15,000yrs BP. Along the east coast there is evidence for the dynamic interaction of several ice lobes sourced from the west and the north with ice streams flowing through the Eden Valley, Tyne Gap, Tweed valley and Forth valley





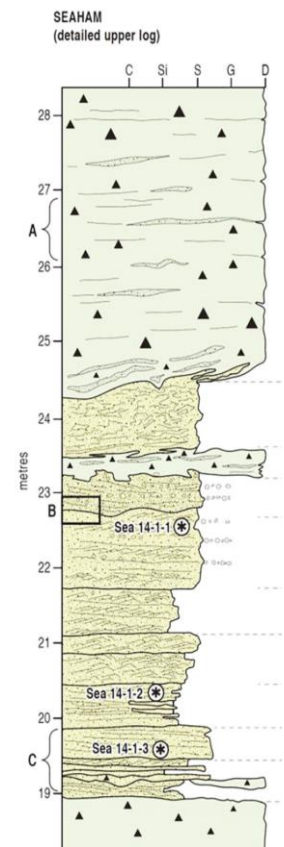
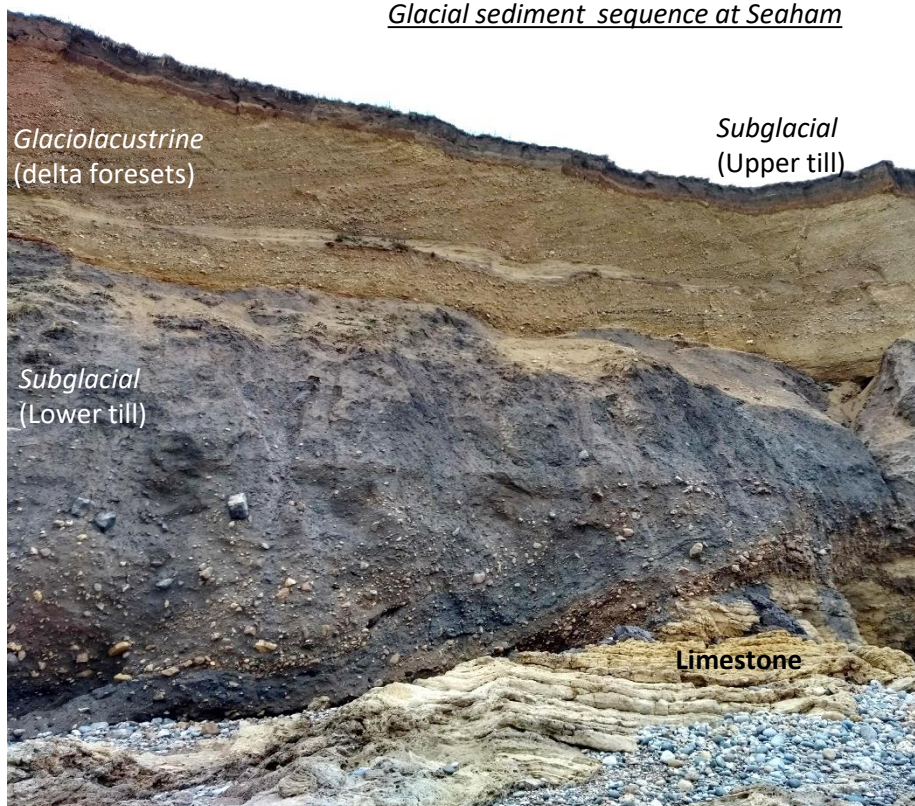
Evidence for Last glacial cycle on the Durham coast: Ice arrived first from the west (through the Tyne Gap), but later flow phases are dominated by ice from the north (Tweed valley and Forth valley)



Glacial sediments: record multiple events as the ice passed over the coast and then retreated

- Two subglacial tills: sediments deposited under the ice as it interacted with the landscape below
- Erratics: Glacially transported rocks/clasts (e.g. granite) that can help us to reconstruct ice flow lines
- Glaciofluvial sediments: record meltwater flowing away from the ice mainly during deglaciation ~ 19,000yrs BP
- Glaciolacustrine sediments: record the damming of meltwater and lake formation with water trapped between the ice and high ground to the east (*Glacial Lakes Wear and Tees*)
- Dropstones: rocks/clasts dropped by floating icebergs in the ice marginal lakes

Glacial sediment sequence at Seaham



Deglaciation: OSL ages on outwash sediments at Seaham dated to 19,900 – 19,000yrs BP. Radiocarbon ages on marine fauna offshore from Seaham suggested the sea flooded in as the ice retreated (19,895 – 19,571yrs BP)

Sources

- <http://railsback.org/FQS/FQSRecordsTemporalExtent01.pdf>; <https://onlinelibrary.wiley.com/doi/10.1002/jqs.3275>;
- <https://onlinelibrary.wiley.com/doi/10.1002/esp.4569>; <https://www.sciencedirect.com/science/article/pii/S0277379119305025?via%3Dihub>;
- <https://onlinelibrary.wiley.com/doi/10.1111/j.1502-3885.2008.00083.x>