



FIELD GUIDE TO FOSSIL COLLECTING AT MAPPLETON IN THE EAST RIDING OF YORKSHIRE







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During the last Ice Age, huge glaciers moved from the north, across Scotland, Wales and much of Northern England, pushing through Jurassic and Carboniferous bedrocks and picking up unsorted and unstratified sediment on the way. This material was finally deposited directly by the glacier. Consisting of a mixture of clay, sand, gravel and boulders of varying sizes and shapes, the deposits are known as glacial till or boulder clay. These deposits finally reached their resting place on the Holderness coast, on the North Sea coastline of the East Riding of Yorkshire.

At Mapleton, the boulder clay which contains those Jurassic and Carboniferous rocks is now eroding at a rapid rate; the fastest coastal erosion in Europe. The various rocks and sediments within this boulder clay contains fossils and plenty of them.



GEOLOGY

Any underlying geology at Mapleton has been obscured by the Boulder Clay. Appleton, along with the rest of the Holderness Coast is underlain by Cretaceous chalk from the Flamborough Chalk Formation from the White Chalk Subgroup) but this rock is so deeply buried beneath the glacial deposits that it is never exposed on the beach. The chalk probably lies at around 60 to 70 feet (18 to 21 m) under the sand, gravel and clay beds and possibly deeper.

The cliffs are primarily composed of Boulder Clay; deposits of till with erratics, deposited during the Devensian glaciation period of Pleistocene age. The Devensian, also known as the Weichselian, refers to the last major glacial period in Britain, lasting from roughly 115,000 to 10,000 years ago

Within these deposits, you will find many erratics and it is these that contain fossils from the Carboniferous, Jurassic and Cretaceous epochs.

There is no stratigraphy at Mapleton. The boulder clay has eliminated any evidence of ammonite zoning. All fossils are randomly distributed in the till.





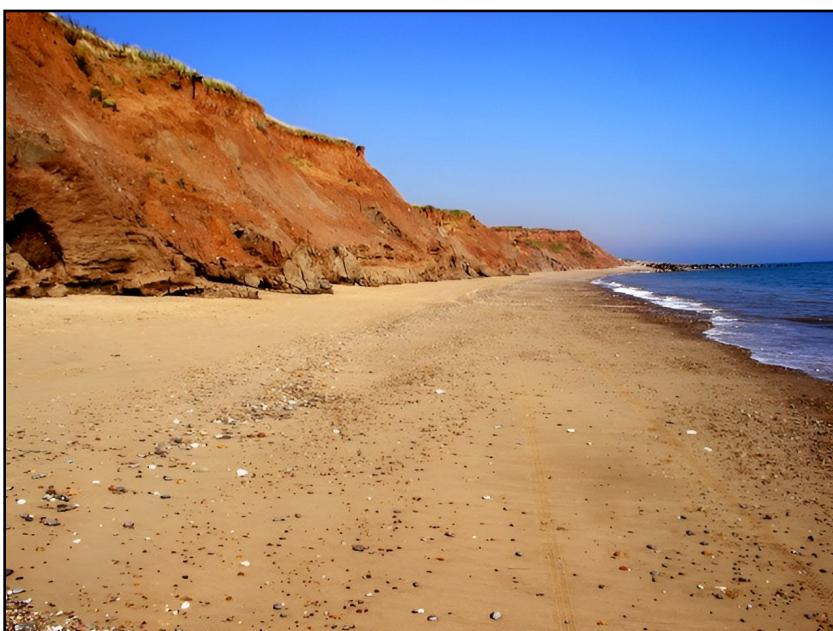
Mappleton is a great place for fossil hunting with children because you can usually find bits and pieces easily.

Belemnites are frequently just laid on the beach. Crinoids and *Gryphaea* (Devils toe nails) are common finds. You'll also find fossilised shells and ammonites. Full ammonites are rarer to spot but you will find ammonite pieces.

Search the stones strewn along the beach and see what you can find there. There'll also be chunks of clay that have been eroded from the cliffs that are rolled around by the sea at each high tide. You can find fossils stuck in and around these clay boulders. Equally you can find fossils just laid on the sand. Basically it's just eyes down on the sand and in the stones. I

Do not search near the cliffs; they are unstable and prone to collapse. Huge chunks fall to the beach with frequency and could be fatal. The sea will wash out the fossils from the cliffs and deposit them on the beach where it's much safer to search.

Hammers are not necessary at Mappleton because you will be able to find lots of pieces without having to crack open rocks. The tide comes right up to the cliffs here and there are cut off points, so you should search on an outgoing tide and ensure you're off the beach well before high tide.









Arnioceras semicostatum
Lower Lias ammonite cluster



Pleuroceras pausicostatum
Middle Lias ammonite



Hildoceras bifrons
Lower Lias ammonite



***Harpoceras* sp.**
Lower Lias ammonite



Gryphaea arcuata
Lower Lias oyster



Belemnite

Ammonite cluster





Coral fossils from the Carboniferous



**Jurassic crinoid stems
within erratic from the
beach**



**Jurassic ammonites
within split erratic from
the beach**



CLEANING & STORING YOUR FINDS

Cleaning & preservation

Most of the fossils that you will find at Mappleton have already survived hundreds of millions of years and have been dragged along by glaciers! They have been buried in sediment and washed around by the tides. Most fossils will require no further treatment other than a wash in tap water. Fossils found within nodules may require prepping using air abrasion.,

Any fossil found on a beach or exposed to salt water will need some degree of desalination. You do need to wash the seawater out of your fossils as the absorbed salt may lead to long-term damage, particularly of the fossils found in the shales and not in nodules..

Do not be tempted to varnish your fossils as this can leave unsightly surface coating.

Storage

Storage is a matter of preference and small boxes of card or plastic are probably a good place to start (See <https://earthlines.com>). Most importantly, your specimens need a label. A fossil collection will be worthless if you do not, at least, record where you found the fossil, even if you don't know the fossil names - you can always name them at a later time. A simple label like this example will be useful.

Name: *Dactylioceras* sp

Location: Mappleton, Holderness Coast, Yorkshire

Geology: Boulder clay

Age: Pleistocene. Devensian Stage,

Date found: June 2023

DISCLAIMER

This downloadable PDF is one of a series of general guides to fossil collecting localities and not an extensive manual for health and safety when visiting such sites.

Furthermore, because potential hazards may change over time, prior to undertaking any fossil collecting activities, you need to make yourself aware of any RISKS, DANGERS, HAZARDS and LEGAL IMPLICATIONS associated with visiting and collecting fossils at any particular site.

UK Fossils, authors or any associated parties cannot be held responsible for your failure to do so, nor any consequences thereof.

Enjoy your fossil collecting safely and responsibly.

