

# **FERMANAGH**

**AREA OF COUNTY:** 1,691 square kilometres or 652 square miles

**COUNTY TOWN:** Enniskillen

**OTHER TOWNS:** Derrygonnelly, Irvinestown, Lisnaskea

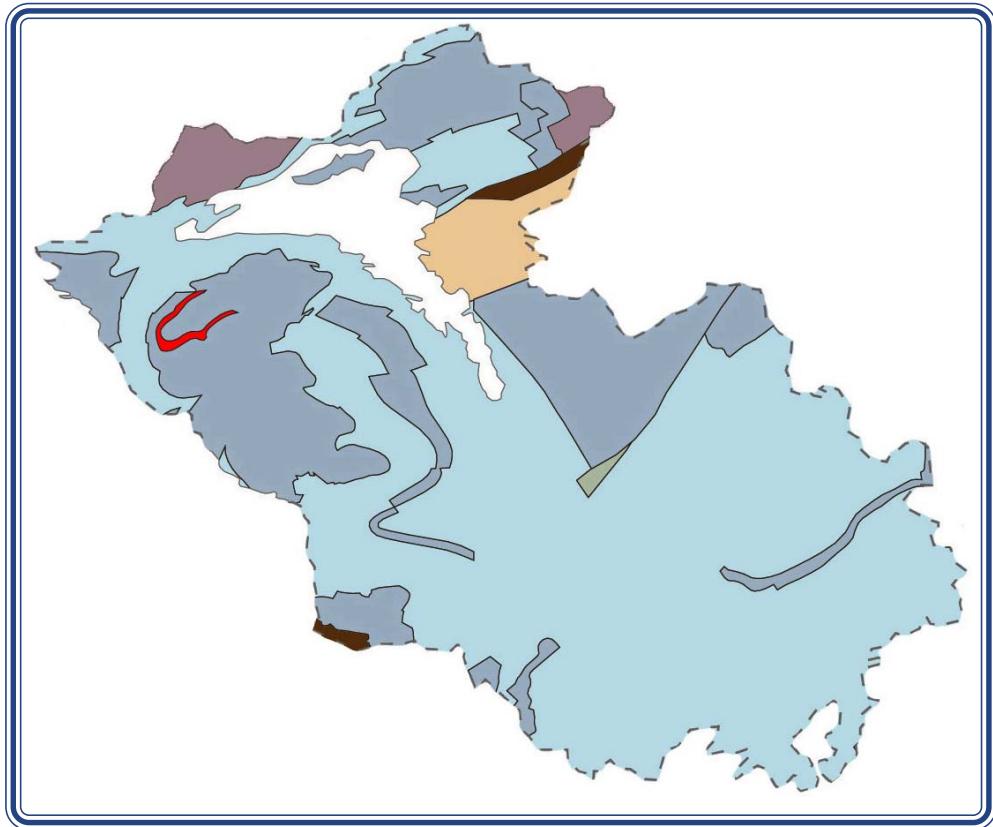
**GEOLOGY HIGHLIGHTS:** Marble Arch caves and Geopark, Karst countryside, Carboniferous fossils

**AGE OF ROCKS:** Precambrian; Devonian to Carboniferous



**Entrance to Boho Cave**

A network of cave passages, dissolved out by underground streams, lies behind the limestone quarry at Boho.



**Geological Map of County Fermanagh**

**Pale Purple:** Precambrian rocks; **Beige:** Devonian sandstones; **Blue Grey:** Lower Carboniferous sandstones; **Light blue:** Lower Carboniferous limestone; **Brown:** Upper Carboniferous shales; **Red:** Gabbro and other dark intrusive rocks.

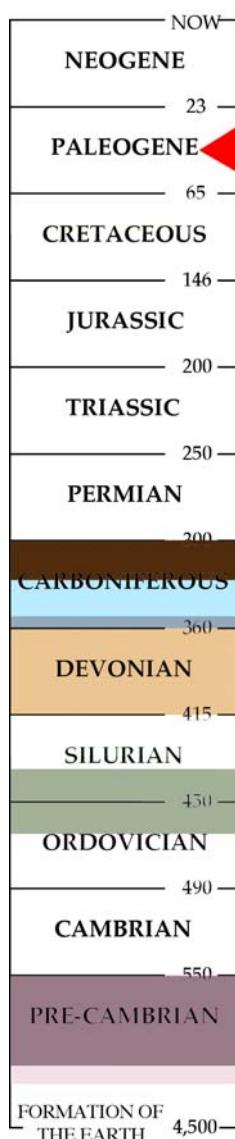
### Geological history

Precambrian (older than 550 million years [Ma]) are found in the northern part of the county. These were originally sediments that had been deposited in a large ocean, but they were metamorphosed and altered as two continents collided and mountains were uplifted.

There is then a long interval in time between the oldest rocks in the county and the next youngest. East of Lough Erne a sequence of Devonian sandstones occur and these are the products of rivers that flowed through a sparsely vegetated landscape some 415 to 360 Ma. These conditions gave way to an ocean that slowly migrated northwards over the country. As it did so sands were laid down and these are often yellowish in colour. These sands were followed by limestone, and changes in sea level during the Lower Carboniferous resulted in the development of alternating horizons of limestone and sandstone. Many of the former contain abundant fossils including corals, brachiopods (sea shells), bryozoans (sea mats), and crinoids (sea lilies).



**Some Lower Carboniferous fossils from Co. Fermanagh: brachiopods (left) and a crinoid fragment and small bryozoan colony (right)**



Some of the fossils have unusually been preserved in silica (glass) and this has allowed geologists and palaeontologists (experts on fossils) to extract them using acid. One locality has been found to contain over 80 brachiopod and 65 bryozoan species. Some of the limestone formed in distinctive reefs. Near Kesh some Upper Carboniferous shales can be found.

The youngest solid rocks found in the county are dark volcanic rocks that were intruded into fractures in the Earth's crust around 60 Ma ago.

Extensive cave systems have developed in the limestones of which the Marble Arch caves are best known. They developed at the end of the Ice Age when melt water dissolved away the stone. As it did so it also precipitated out calcium carbonate to form stalactites and stalagmites and other beautiful formations.

It is often difficult to find rock at the surface in Fermanagh because much of the landscape has been covered with glacial deposits. These form rounded hills called drumlins. By and large the glacial deposits give rise to good agricultural land because they contain a high percentage of lime.

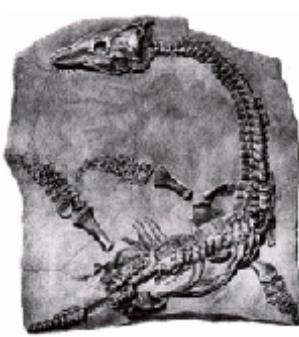
Part of Fermanagh and adjacent Cavan have been designated a Geopark, and this has become a wonderful natural resource for walkers, scientists, and students.

**Geological timescale showing age of rocks in Fermanagh**

## Lord Enniskillen and his fossil fishes at Florence Court



William Willoughby Cole (1807-1886), the third Earl of Enniskillen loved fossil fishes and together with a friend Philip de Malpas Grey Egerton assembled a large collection for his museum at Florence Court. When fossil fish are collected they often split into two halves and both men kept one half each. Cole's collection was housed in a pavilion to the left of the house. His museum also contained a skeleton of a marine reptile called a plesiosaur from Lyme Regis in southern England. In 1883 he sold his collection to the Natural History Museum in London where specimens were reunited with those of Egerton. The National Trust now own the house.



Clockwise from top left: Florence Court House; 3rd Earl of Enniskillen; the 150 million year old marine reptile *Plesiosaurus macrocephalus*; a Jurassic fish from Germany.

### Suggested reading

- Kenneth James: *Damned Nonsense! the geological career of the third Earl of Enniskillen* (1986) Ulster Museum, Belfast.
- Patrick McKeever: *Walk: Cuilcagh. Landscapes from Stone*, Geological Survey of Ireland (2002).

Map adapted with permission from Geological Survey of Ireland 1:1,000,000 map 2003.

Image credits: Mike Simms 1; Ulster Museum 3 (left); Patrick Wyse Jackson 3 (right), 4 (top left and right, and bottom left).