

# CAVAN

**AREA OF COUNTY:** 1,931 square kilometres or 745 square miles

**COUNTY TOWN:** Cavan

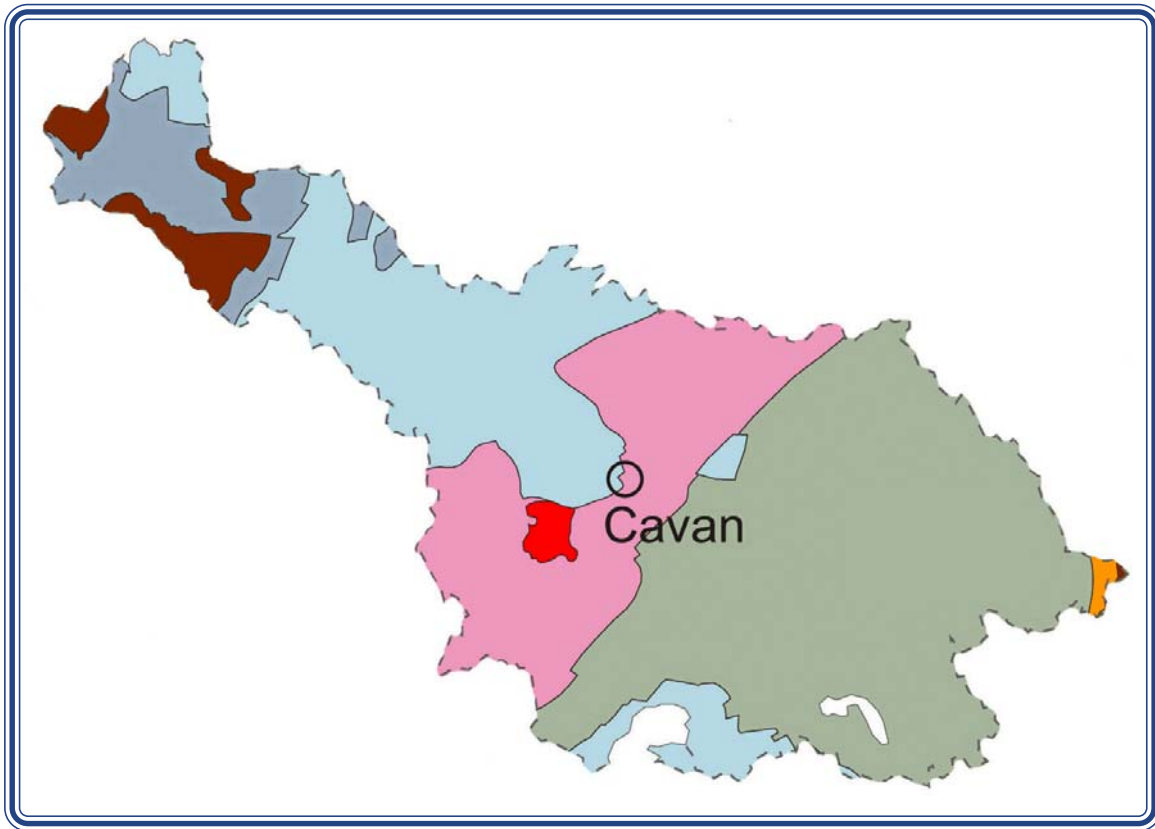
**OTHER TOWNS:** Arvagh, Bailieborough, Ballyconnell, Ballyjamesduff, Cootehill, Kingscourt, Shercock, Virginia.

**GEOLOGY HIGHLIGHTS:** Drumlins, Cuilcagh Mountain Geopark, Kingscourt inlier.

**AGE OF ROCKS:** Ordovician - Silurian; Carboniferous - Triassic



**View of Cuilcagh Mountain**



**Geological Map of County Cavan**

**Pink:** Ordovician; **Red:** Granite; **Grey:** Ordovician & Silurian; **Dark Blue:** Lower Carboniferous sandstones; **Light blue:** Lower Carboniferous limestone; **Brown:** Upper Carboniferous shales; **Orange:** Permian & Triassic sediments.

### Geological history

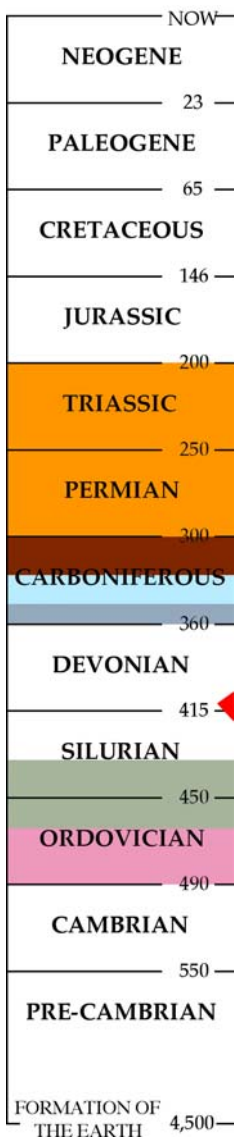
The oldest rocks in County Cavan are 417-495 million years old [Ma] and consist of mudstones and volcanic rocks. At that time Ireland lay beneath a deep ocean, on the edge of an ancient continent made up of Scotland, north America and the north of Ireland. A huge ocean separated this continent from the rest of Ireland, England, Wales and Europe. Over millions of years, this ocean closed and the two ancient continents collided, heating and deforming the rocks to form slates. The same rock types occur from Longford, through Cavan, County Down and into the Southern Uplands of Scotland. Plate tectonic movements closed the ocean and the ocean floor rocks were faulted in slivers against the northern side. County Cavan now has these slivers of slate and sandstones stacked up across the southern half of the county. Only where a few graptolite fossils occur in the black slates can we work out the actual age and structure of the rocks.



**Drumlin landscape at Farranydaly, Co. Cavan.**



**Drumlin and lake landscape, Cavan and Fermanagh.**



As the ocean finally closed around 400 Ma bodies of molten magma moved up through the Earth's crust, cooling slowly to form granite. Just one small area of granite is known from the county, at Crossdoney a little south-west of Cavan town.

The northern half of the county is composed of Carboniferous rocks, firstly limestones deposited in a shallow tropical sea with lots of animal life. The sea then shallowed and was filled in with delta sediments which became sandstones and shales. These rocks occur in the uplands around Lough Allen and especially in the Cuilcagh Mountain area. In the surrounds of Cuilcagh Mountain, there is a lot of limestone exposed which has developed karstic features since the Ice Age, including many caves and potholes and limestone pavements.

Ireland lay in the northern tropics during the Permian and Triassic periods, and the sedimentary rocks from this time, preserved around Kingscourt in Cavan (also in Monaghan and a little in Meath), record deposition of sediments in arid deserts and temporary seas that were periodically dried out to precipitate thick evaporite deposits of gypsum. The subsequent Jurassic, Cretaceous and Tertiary periods have largely left no trace as rocks preserved on land. It is inferred that Ireland was mostly a land area, subject to weathering and erosion, which supplied only offshore basins with sediment.

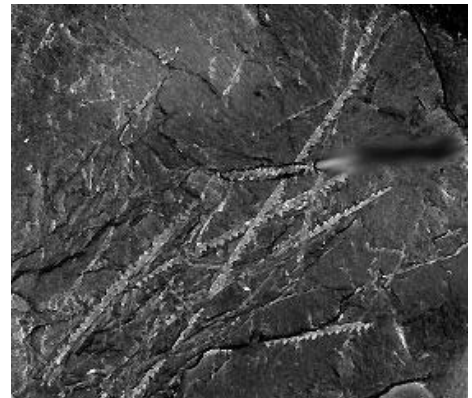
**Geological timescale showing age of rocks in Cavan.**



However, the Cavan landscape is actually dominated by drumlins, whose international name comes from the Irish 'druim' meaning 'mound'. These are humps of debris left behind by ice sheets, and are sometimes described as a 'basket of eggs' topography. They are streamlined and show the direction of flow of the ice sheets that covered Cavan up to around 10,000 years ago.

### Cavan fossils

A few localities are known in the Ordovician and Silurian rocks where graptolites (right) are found, but they are scattered. In one single locality a few trilobite specimens are known, but in general fossils are rare except for the planktonic graptolites. In Carboniferous rocks fossils may potentially be found anywhere in the limestones, but as glacial deposits often obscure the bedrock, fossils are not a highlight of Cavan.



### Geoparks

The Marble Arch Caves Geopark (a recognised international status) was recently extended to include parts of Cavan, making it the first international Geopark anywhere. This recognises the importance of the geological features and the landscape around Cuilcagh Mountain, preserving them and making their interest accessible to all.

### Mining & Building Stones

Whilst the Knocknacran Mine is actually just in Monaghan, the gypsum mineral it provides is mostly processed into plasterboard and other products at Kingscourt in Cavan. This mine fuelled the construction boom with plaster for construction needs and for the setting agent in cement, necessary for concrete. There are also pits extracting red mudstones to fire into bricks around Kingscourt.

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

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