

WESTMEATH

AREA OF COUNTY: 1,838 square kilometres or 709 square miles

COUNTY TOWN: Mullingar

OTHER TOWNS: Athlone, Castlepollard, Devlin, Fore, Kilbeggan, Kinnegad, Moate, Tyrrellspass.

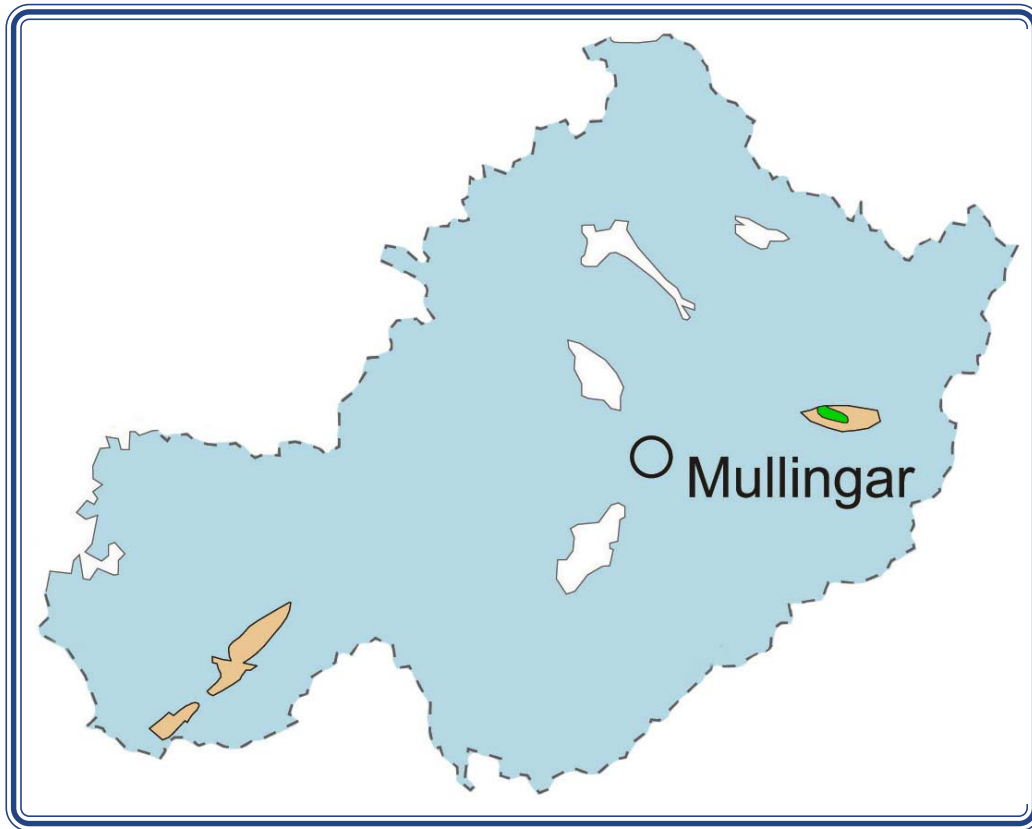
GEOLOGY HIGHLIGHTS: Fore springs, eskers, Carboniferous limestone

AGE OF ROCKS: Silurian to Carboniferous



Mullingar bypass

The trees have now been removed so that the full anticline fold in the Lower Carboniferous limestones is visible.



Geological Map of County Westmeath

Green: Silurian; **Beige:** Silurian & Devonian sandstones and conglomerates;
Light blue: Lower Carboniferous limestone.

Geological history

The very oldest rocks in the county are marine sandstones of Silurian age, about 425 Ma, found around the summit of Sion Hill, north of Killucan. Younger rocks, of Devonian age around 400 Ma, are also found on Sion Hill and further west in low hills near Moate. These sandstones and conglomerates, with some volcanic ash layers, were deposited on a low flood plain.

The dominant rock types in Westmeath belong to the early part of the Carboniferous, between about 360 and 330 Ma. At that time the region was covered by a shallow tropical sea (Ireland was just south of the Equator then). The sea teemed with life, with animal communities changing as sea levels changed. Also different marine environments formed different types of limestone. Carbonate mud banks or "reefs" (Waulsortian Limestones) developed as upstanding mounds on the sea floor across parts of Westmeath (and much of the Midlands of Ireland). Growth of these mounds was probably due to the rapid accumulation of fine carbonate mud produced by unknown

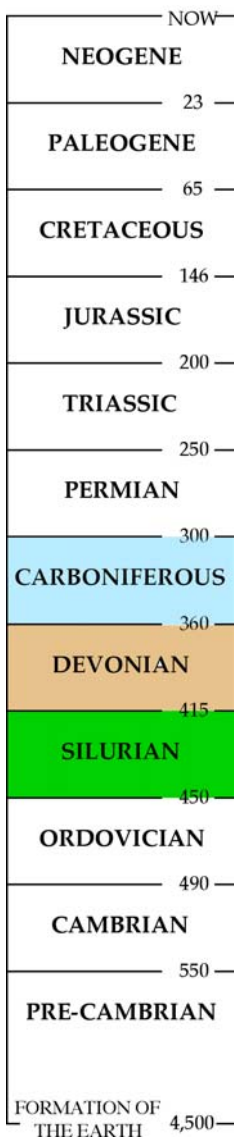


Panorama of Lough Derravaragh

organisms. A rich fauna and varying micro-organisms lived on the mounds. In other parts deeper water basins had what is known as Calp limestone. This developed from occasional flows of limey sediments from shallow water into the basins, with quiet periods of mud sedimentation in between each flow event. This leads to beds of regular limestone separated by thin black shale layers.

Carboniferous limestones are often easily dissolved by surface water or groundwater. This has resulted in the development of many karst features involving underground drainage especially in the Fore area (Seven Springs). Isolated hills like the Rock of Curry and Hill of Uisneach are thought to be residual tower karst landscapes (like that seen today in parts of China and SE Asia). Lough Funshinagh although not a turlough, has been known to drain away completely several times!

The last development occurred during the last 1.6 million years when ice ages came and went. The last one ended about 10,000 years ago, giving Westmeath some of the finest glacial deposits of sand and gravel across the lowlands. Eskers (the international name for these features comes from the Irish name: eiscir) formed throughout the county, from rivers flowing beneath the ice, leaving a long narrow ridge of sand and gravel. Around 10% of the county is covered by eskers, and even more by associated outwash deposits of sand and gravel where the rivers came out from under the ice.



Geological timescale showing age of rocks in Westmeath



A bog near Derravaragh

The final stage of landscape evolution has been the growth in the last 10,000 years of raised bogs in wet depressions in the landscape. Groundwater in Westmeath is also an important part of its geology. Water from Lough Lene flows to the River Deel and hence to the Boyne and the Irish Sea. Underground drainage goes to the springs at Fore and onto the River Shannon and the Atlantic.

Folds in Rocks

Sedimentary rocks are normally laid down in flat layers called beds. Sometimes they get squeezed and folded later on. One such fold is visible in the N4 road between Mullingar and Lough Owel. When the road was improved the fold was very clear, then trees were planted which obscured a lot of it, but now they have been cleared and it can be seen properly again. As you drive up and over the hill, you can see the beds dipping one way and then gradually flatten out and start dipping the other way. This fold is called an anticline.

Quarrying & Building Stones

Prehistoric (Mesolithic) chert quarrying for stone tools has been recognised around Lough Derravaragh. The Calp limestone is good for local building stone supplies as it comes out in regular shaped blocks. One or two small quarries extract limestone for aggregate for the construction industry, with aggregate also obtained from small quarries exploiting the glacial sand and gravel of the eskers.

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