

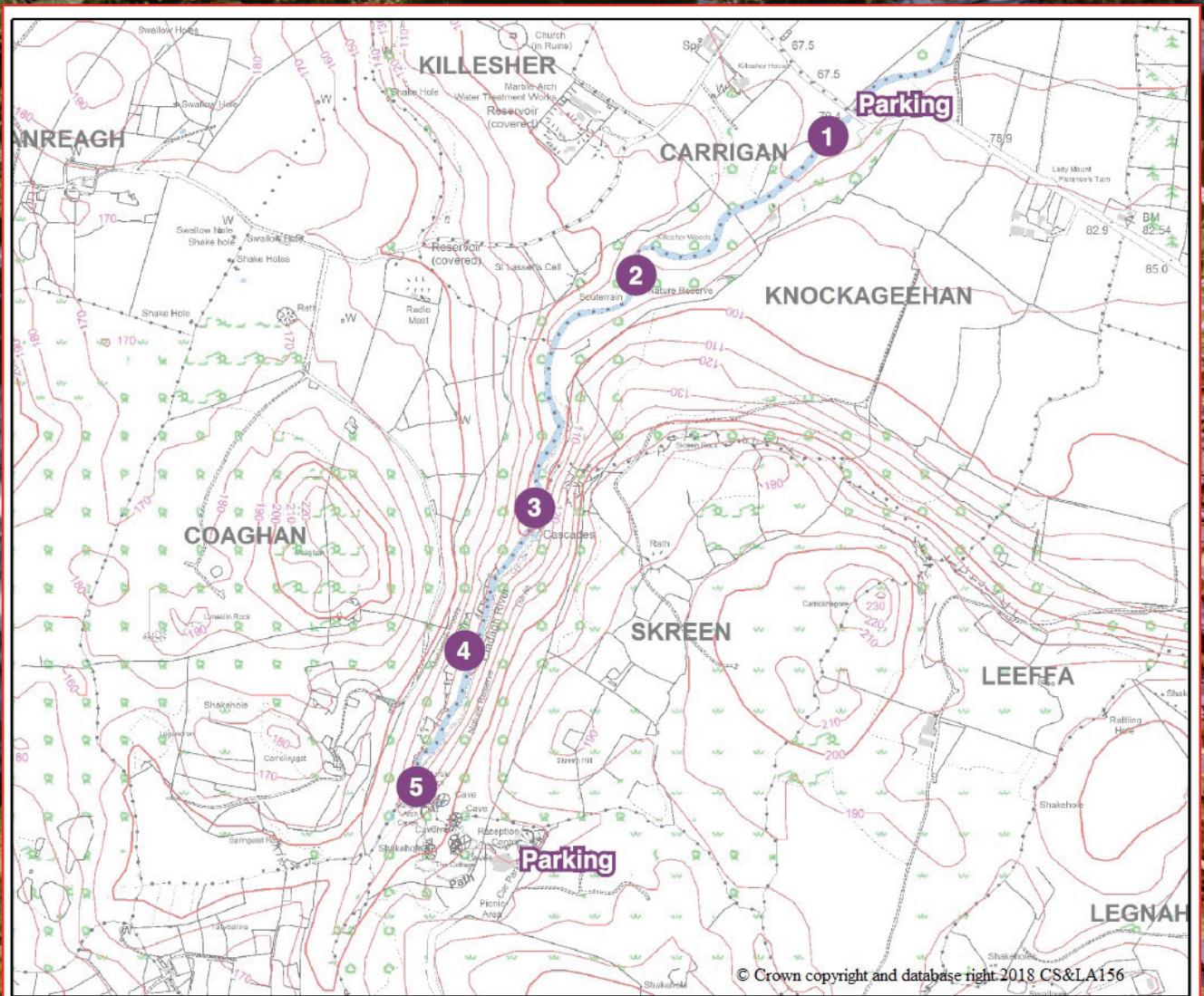
Cladagh Glen

Teacher's Sheet

Visit Time: 2 hours

The Cladagh Glen offers a good number of outcrops along a near continuous succession of Lower Carboniferous rocks alongside the tranquil setting of the Cladagh River. The visit can be combined with a trip to the Marble Arch Caves that can be reached by climbing the steps at the Marble Arch itself.

All sites are easily accessible and / or seen from a well-kept gravel path.



0 0.25 0.5 1 Km

Location Map

Teacher's Notes

SUGGESTED STOPS	POINTS TO NOTE
Access:	Park at the small car park at the bottom of the Cladagh Glen, situated along the main Florencecourt to Blacklion road. There is a small bridge crossing the Cladagh River and the car park is just beside the bridge.
1	<p>The Cladagh Glen is an example of damp, ash woodland, the type of woodland that would have existed along rivers just after the last glaciation. It is now a rare habitat, and the Cladagh Glen is one of the few places where this can be observed in Ireland.</p> <p>In the river bank, just beside the bridge, there is a small exposure of the Benbulbin Shale Formation. These dark grey shaley mudstones represent deep water conditions during Lower Carboniferous times. The shale contains a wealth of fossils including crinoids, bryozoa and brachiopods indicating that this was a true marine environment.</p>
2	<p>As you travel up the Cladagh Glen you will notice well bedded limestone on both sides of the Cladagh Glen, known as the Glencar Limestone Formation. This formation is composed of interbedded shales and limestones, often with a very high mud content.</p> <p>Despite having a high mud content, the Glencar Limestone Formation represents shallower water conditions than the underlying Benbulbin Shale Formation and reflects the decreasing water depths.</p>
3	<p>Approximately half way up the Cladagh Glen you will come to the Cascades, a resurgence or spring from the Prod's Pot - Cascades cave system. This cave system is highly unusual as the lowest level is formed within the Glencar Limestone Formation, when all other major cave developments occur within the Dartry Limestone Formation.</p> <p>In the rocks just beside the Cascades you will notice deposits of tufa on the Glencar Limestone Formation outcrop. Tufa is a rough, thick, rock-like calcium carbonate deposit that forms by chemical precipitation from bodies of water with high dissolved calcium content.</p> <p>The waters in this area have a high calcium content due to their association with limestone, the main constituent of which is calcium carbonate (CaCO_3).</p>
4	<p>About 300m further up the path, the boundary between the Glencar Limestone Formation and the Dartry Limestone Formation is exposed in the opposite bank of the Cladagh River.</p> <p>The main mass of limestone forming the 20m high cliff that dominates this bank is formed of very thickly bedded (3-5m) pale to medium grey limestone of the Knockmore Limestone Member of the Dartry Limestone Formation. Lying stratigraphically beneath the base of this is some 8m of thinly bedded rocks that belong to the Glencar Limestone Formation.</p> <p>The overall environmental picture of the depositional basin during the time of deposition of the Benbulbin Shale, Glencar and Dartry Limestones is of a reduction in the mud content and gradual establishment of clearer-water shelf conditions. This also indicated a decrease in water depth, something that continues right the way to the top of Cuilcagh Mountain with the eventual cessation of marine conditions altogether.</p> <p>The environmental change is as a direct result of the Late Palaeozoic glaciation in the southern hemisphere. The island of Ireland at that time was part of the continent of Laurussia together with North America, Europe and Russia and was located approximately on the equator. However, a glaciation of this scale caused a significant lowering in sea level leading to a gradual change in depositional environment as a result.</p>
5	<p>At the very end of the path, just before the steps begin up to the Marble Arch Caves visitor centre you will see the Marble Arch, a natural limestone bridge, and the remnants of a collapsed cave. It is just beyond the Marble Arch where the Cladagh river resurges. The resurgence pours from beneath a cliff face before cascading under the Marble Arch and turns abruptly north into the head of the Cladagh River gorge.</p>