

Cladagh Glen

Information Sheet



Location: CLADAGH GLEN
Conservation designations: NNR
Grid reference: H 12787 35685
Parking available: Yes
Personnel to be contacted prior to visit: None

Useful equipment:

- Camera
- Metre stick
- Hand lens

Relevance to national curriculum:

- Junior Cert Geography (The Earth's Surface)
- GCSE Geography (The Restless Earth)
- Leaving Cert Geography (Rock Cycle, Tectonic Cycle, Landform Development)
- AS/A2 Geography (Plate Tectonics, Climate Change – Past and Present)

Rock types and geological processes observed: limestone, shale, tufa
Geological structures: bedding, lithological contact
Geomorphological features: springs, gorge, resurgence

Site specific hazards and risks:

- Deep water
- Steep drops from path
- Uneven ground

Mitigation measures:

- Consult weather forecast
- Outdoor learning qualification
- First aid kit
- Appropriate teacher / student ratio
- Clear instructions to be given to students
- Ensure students have appropriate clothing / footwear

Did you know: The main rock types in this area are limestone and shale, all of which formed during the Carboniferous period. The limestone formed at the bottom of a shallow tropical sea and similar rocks are found in Stonehammer Geopark in Canada, as well as in Kenozero National Park in Russia.

Topics to cover before visit: sedimentary rocks and processes, glacial processes and products

Keywords: Carboniferous, shale, limestone, contact, gorge, sea-level change



Limestone



Shale



Tufa

Description of limestone:

- Non-clastic rock
- Very fine-grained
- Medium grey
- Abundant fossils
- Reacts with HCl
- Layers (bedding)

Description of shale:

- Clastic rock
- Dark grey to black
- Very fine-grained
- Abundant fossils
- Reacts with HCl
- Thin layers (laminations)

Description of tufa:

- Non-clastic rock
- Very fine-grained
- Pale cream to grey
- No fossils
- Reacts with HCl
- Occurs at springs
- NB Tufa is a type of limestone

Geological history:

The oldest rocks are shale and were deposited in a deep, marine basin as mud during the Lower Carboniferous period. Due to the quiet nature of the environment, the mud settled out of suspension in thin layers that are now preserved as laminations. As the sea level began to fall, lime-rich mud was deposited together with some fossils indicative of shallower water conditions, although the levels of mud in the sea were still quite high. This led to the deposition of the muddy Glencar Limestone Formation. As sea level dropped even further, a much purer limestone was deposited containing abundant fossils and without much mud. This is now seen as the Dartry Limestone Formation. The journey from the bottom to the top of the Cladagh Glen tells a story of a falling sea level in a Carboniferous Sea approximately 340 to 330 million years ago. The Dartry Limestone Formation has since been subjected to chemical weathering leading to the formation of extensive cave systems including the Marble Arch Caves.