

# Global Geotourism Perspectives

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## **The Geology of Ireland:**

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# 11

## The Geology of Ireland: providing a catalyst for sustainable tourism development

**Patrick Maher**

The island of Ireland (comprising Ireland and Northern Ireland) is fortunate to have an unspoilt and spectacular landscape built on a foundation of diverse rock types. The island's location on the western edge of Europe with its exposure to the Atlantic Ocean's varying weather patterns has ensured that the landscape is one of rugged beauty and one which fascinates all visitors.

Ireland's geology is equally fascinating, and the rocks on which its landscape is built, have an interesting and ancient story to tell. The successful conveying of this story by geologists has enabled tourists visiting iconic landscape locations to investigate deeper into the character of these regions.

The development of geotourism in Ireland has also been linked with local level community enhancement projects. In recent times, geotourism has provided a mechanism to divert tourists into rural hinterlands, creating sustainable employment and assisting sensitive physical development.

### The geology of Ireland

The geological timescale in Ireland spans almost 2 billion years. The island's lithology displays great variation and some of the best rock exposures can be seen along its coastline and in areas which are very accessible to tourists.

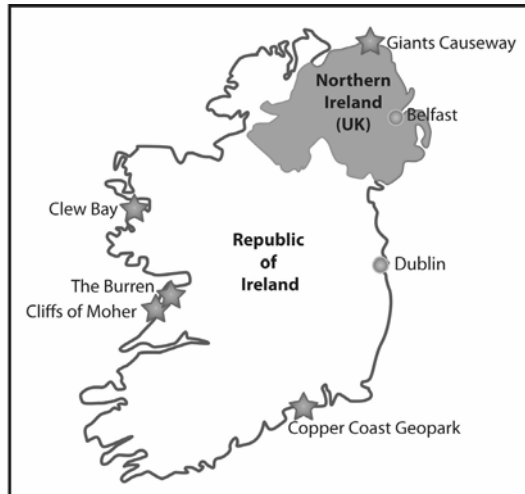
Ireland's oldest rocks are to be found on Inishtrahull – an island off the coast of northern County Donegal. Occurring as metamorphic gneiss from the Precambrian era, they have been radiometrically measured at 1.78 billion years old. Geological studies have also shown that Inishtrahull was originally part of southern Greenland. Metamorphic rocks from Precambrian times are also located in the north, west and south east of Ireland.

Ancient sedimentary shales and sandstones occurring with volcanic rock from the Ordovician Period are found exposed along the Copper Coast of County Waterford in the south east of Ireland. Quartzite rocks make up the famed holy mountain of Croagh Patrick in County Mayo and these were laid down in the Silurian Period. Sandstones from the Devonian period are impressively exposed in the south west of Ireland in the counties of Cork and Kerry.

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The predominant rock type in Ireland is limestone. It formed in shallow tropical seas over 320 million years ago during the Carboniferous Period. The dissolution of limestone has led to the development of cave systems and features on the land surface such as clints and grikes. These features are exposed in the mid-west of Ireland in a region called the Burren in County Clare (see Figure 11.1) and at the Marble Arch Caves in Northern Ireland. Also in Northern Ireland 60-million-year-old igneous basalt flows are found exposed in the north east and they have created the world-renowned Giant's Causeway.

**Figure 11.1:** Selected geotourism locations in Ireland



Throughout the island deposits from the most recent Quaternary Period such as sand and gravels mark out the youngest geological features on the landscape of Ireland. The last significant geological event to affect the landscape of Ireland was the Midlandian Ice Age and this ended about 10,000 years ago. This ice sculpted and shaped the topography from the middle to the north of Ireland.

Historically, interest in the geology of Ireland has been very prominent and it is also notable that in 1895, Ireland was the first country in the world to have its geology completely mapped at a scale of 6 inches to the mile or 1:10,000. These original maps are still consulted today and sites of importance described then are still attracting visitors today.

## Tourism in Ireland

Historically, a few iconic locations in Ireland provided the main attractions for the many millions of tourists that visited each year. Magnificent landscape locations such as the Cliffs of Moher, the Lakes of Killarney and the Rock of Cashel appear in the list of top tourism attractions for Ireland decade after decade. While financially assisting overall gross economic revenues in Ireland, these 'honey pot' locations did not spread wide-scale business or generate a marketing spinoff to communities living in the surrounding rural hinterlands.

**Chapter extract**

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