

Exploring the Moray Firth

Objective

To explore a map of the North East of Scotland and identify geological features, settlements, protected zones and industrial areas.

Experiences and Outcomes

SOC 0-07a

I explore and discover the interesting features of my local environment to develop an awareness of the world around me.

SOC 1-07a

I can describe and recreate the characteristics of my local environment by exploring the features of the landscape.

SOC 2-14a

To extend my mental map and sense of place, I can interpret information from different types of maps and am beginning to locate key features within Scotland, UK, Europe or the wider world.

Background Information

The Moray Firth is a large triangular bay in the North East of Scotland stretching from Duncansby Head in the North, Inverness in the West and Fraserburgh in East. It is Scotland's largest bay and has 800 kilometres (500 miles) of coastal habitat. It is on average 80 metres in depth, with the exception of a deep channel off the coast of Fraserburgh where it extends to 200 metres deep.

The Moray Firth has not always appeared this way; around 3.5 million years ago much of the North East of Scotland, the Moray Firth and the North Sea were covered by a large lake called Lake Orcadie. Evidence from fossil records confirms that the lake was filled with strange prehistoric creatures, including some the earliest records of fish. The shores of the lake were inhabited by the first land plants found in fossils called Rhynie Chert, discovered on the hillside in central Aberdeenshire. The lake was brimming with life which ultimately settled as rich carbon deposits on the lake bed and has since formed the oil fields in the Moray Firth and North Sea.

Since this time in history, the area was subject to changes through the Earth's movements. Earthquakes caused the land to lift out of the sea and the Great Glen fault, which runs from the West of Scotland, through Loch Ness and the Moray Firth is evidence of this large movement of the land. An ice age further changed the landscape, as glaciers carved their way through the land and seabed and created what we now call the Moray Firth. The landscape and coastline that exists today are still being eroded by the weather and the forces of the sea.

These natural forces acting over millennia have lead to the formation of fabulous geological features such as sheer cliffs, rocky shores, sand dunes, pebble beaches and muddy estuaries. The seabed of the Firth is predominately sandy, but also features muddy floors and rocky outcrops.

The water in the Moray Firth is regulated by the cool currents of the North Sea in the East, ranging from 5°C in winter to 15°C in summer. These temperate waters, combined with the varied habitats, result in the vast diversity and abundance of life that inhabit and visit the Firth. The inner Moray Firth, from Helmsdale to Lossiemouth has been identified as a Special Area for Conservation (SAC) for its population of bottlenose dolphins and the sandy sea beds are important nursery grounds for fish. Much of the coastline is protected for its scientific or conservation importance, including the rocks of Brora, recognised as important fossil records of the history of life in the area.

The majority of the Moray Firth coast is bordered by sheer rock cliffs and these are home to colonies of nesting birds during the summer. The inner firths, such as the Dornoch and Cromarty Firths are internationally important areas attracting large numbers of migratory birds and wildfowl which come to find food on the muddy tidal flats during the winter, when inland ground is frozen and offers little food. The sand dunes, such as the Culbin Sands at Nairn, developed over thousands of years and are inhabited by plants and animals specialised to survive in this unique environment.

People of the Moray Firth

The first human settlements appeared around the Moray Firth over 6,000 years ago. People were attracted to the area for its sheltered bays that have easy access to the bountiful marine life that can be harvested and fishing remains an important industry in the area today. The people of the North East of Scotland have also benefited from the fields of fossil fuels that lie beneath the seabed and supply the country with all important energy. People are drawn to the Moray Firth for the wealth of natural resources that can be exploited, fish, oil or simply the enjoyment of the firth's wonderful nature.

Activity

Look for the town nearest to your school. How far is the school from the sea and Macduff? Use the map and explore the different features of the map, including scale, symbols and keys. Identify the different features of the keys, the natural environments and human activities.

Discussion Points and Follow-on Activities

Look at a local environment close to the school. What features can the children identify on a map? Are there any features that are similar to those found in the Moray Firth?

Look at world maps and discuss how they are different from local maps.