Duddon & Furness MRT – here by geological chance?

The area served by the team is one of the most diverse in its geography, geology, history and culture in the country.

Hundreds of books have been written about the area and the area has produced many authors. Father Thomas West who wrote the ground-breaking and best seller 'Guide to the Lakes' in 1779, Harry Griffin, author of many books about the Lake District and the Guardian's Country Diary, which he did for 53 years, Norman Nicholson, born in Cartmel-in-Furness but for most of his life a resident of Millom. Wordsworth, although not local to the area visited the valley many times and writes in his Duddon Sonnets about the river, the valley and its people from source to sea ending with the lines,

> *'Still glides the stream, and shall not cease to glide' – before his final dignified acceptance of mortality'.*

What's in a name? According to 'A Dictionary of Lake District Place-Names', the name Duddon is obscure, possibly Old English for valley. The name Furness is also obscure, perhaps far-ness meaning headland, or perhaps far-split, a reference to the channels between the mainland and the islands of Walney, Piel and Barrow Island and Foulney.

Some facts (a rough guide):

- The oldest rocks are those of the Skiddaw Slate forming Black Coombe (600m). These rocks, the oldest in the Lake District, were deposited as marine muds and sands during a period stretching from 510 and 460 million years ago (the early part of the Ordovician Period). The ancient sea in which these sediments formed was to the north of a small chunk of continent called Avalonia, which lay near the South Pole.
- Borrowdale Volcanic Group is a volcanic group of rock formations named after the Borrowdale area of the Lake District, in England. They are late Ordovician in age (roughly 450 million years old). It is thought that they represent the remains of a volcanic island arc, approximately similar to the island arcs of the west Pacific today. This developed as oceanic crust to the (present) north-west and was forced by crustal movement under a continental land-mass to the present south-east. Such forcing under, as two plates meet, is termed subduction. This land-mass has been named Avalonia by geologists. It is now incorporated into England and Wales and a sliver of North America. The rock is composed of lavas (mainly andesites), tuffs and agglomerates, along with some major igneous rock. These rocks of the Borrowdale Volcanic Group give rise to dramatic scenery. The mountainous conformations, the high rainfall of the area and the relative impermeability of the rock give rise to a high risk of storm flooding. These rocks are found on either side of the river Duddon to the north of Duddon Bridge, Stickle Pike, Caw, Dow Crag, Harter Fell Wallabarrow Crag etc.

- Around the rim are softer sedimentary rocks, carboniferous limestone formed 354-290 million years ago in a warm shallow sea. The Permian (290-248 million years ago) and Triassic (248-205 million years old). Periods in Cumbria are represented by red mudstones and sandstones that outcrop in a broken ring around the Lake District, from the south-west coast (south of Whitehaven) to the Solway Firth. The Permian-Triassic rocks of Britain were deposited under arid conditions over a large desert plain with numerous basins and mountain ranges.
- Other rocks have been deposited and vanished.
- Several periods of glaciations during the last 20 million years, the most recent ending only 12,000 years ago have eroded the mountains, deepened valleys and deposited their spoil over the coastal fringe and Low Furness.

The above is only a very brief history of what is below our feet, the fells and valleys we walk, and enjoy in other ways today. After the last ice age mosses then plants and trees appeared as the sticky boulder clay acquired humus and became loam.

Animals eat plants and trees, man eats both. The dating of evidence of man's arrival can be found in the sediments of peat on the fell sides and silt deposited upland tarns such as Seathwaite Tarn and Devoke Water. Pollen and ash grains are well preserved and have been dated to 6,000 years ago. Mesolithic hunter gatherers began clearing the woodlands by burning. This deforestation was continued by the Neolithic, the same people who have left evidence of stone axe workings above the Langdale valley and Scafell Pike. Some fine polished stone axes and signs of settlement have been found on the costal fringes of the area.

The stone circles at Swinside and Birkrigg, ring cairns and ancient field clearances are all signs of unwritten history.

Time moves on. The Romans came and left leaving little evidence of their existence in the area, the nearest being at Ravenglass and Hardknott Fort, though there can be no doubt that they covered the same ground as the DFMRT do now.

The Norse arrived possibly bringing herdwick sheep and leaving a rich legacy of place names such as Seathwaite – clearing by the lake, Ulpha - the hill frequented by the wolves and Birks Bridge, Birks Wood, (birk = birch).

The biggest change to the landscape since the ice age came with the discovery of iron ore in the Furness area. Vast areas of woods were coppiced to make charcoal, used as the fuel for the iron furnaces, an excellent example of which can be seen on the north side of the Duddon just past Duddon Bridge. Hundreds of charcoal burning platforms are dotted around the woodlands Low Furness and the Duddon Valley. An extract from a book on iron smelting quotes " 5 tons of wood made 1 ton of charcoal and 11 cwts would produce about 3cwts of iron from 1 ton of ore". (1 cwt =120 pounds weight). The hill sides of low Furness and later Hodbarrow produced millions of tons of high grade hematite iron ore. Local limestone was used as the flux.

In the mid 1800's blast furnaces began using imported coke as a fuel. The sleepy fishing villages of Barrow and Millom soon became towns based on iron production.

Barrow at one time was one of the largest iron and steel manufactures in the world. Ulverston and Askam also had iron furnaces.

By the mid 60's the last iron ore workings at Hodbarrow near Millom had closed and soon after the ironworks. The steelworks at Barrow closed in 1984 and the last iron furnace, Cairds of Barrow in 1990 thus bringing to an end an industry first recorded in the Doomsday Book, proof that iron ore was exploited in pre-Norman times. All that is left are the mine spoil heaps, slag banks, some fine buildings, some not so fine buildings and bronze statues in the squares of Barrow.

Shipbuilding was an offspring of the iron trade. Small shipyards constructing ships to transport iron, charcoal and limestone were located at Barrow, Ulverston, Millom and Greenodd. When the iron trade died it left a legacy in the form of BAE Systems, one time Vickers, builders of what many believe to be the finest surface vessels and submarines ever to be produced. Glaxo, the pharmaceutical company in Ulverston is on the site of the old iron works.

Slate workings, forestry, farming and tourism have all contributed to the economy of the region and all of it due to the geology.

The geology and geomorphology covered by the D&FMRT are varied and complex. From Wordsworth's sylvan river Duddon to Harry Griffin's rugged crags, Norman Nicholson's ironworks and stinking industry to West's pre romantic Lake District. Miles of shifting sands and rushing tides; bog and bracken, wind-blown fells and quiet woods have all been touched by man's quest to make a living from the land.

Today it is the tourist or perhaps a local who visits the valleys and fells for a different reason, perhaps to escape for a brief moment in geological time from the rigours of modern life. Whatever the reason we still exploit the land.

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