

Mining heritage



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Ireland is richly endowed with a diversity of mineral deposits, with a mining heritage extending for over 4,000 years. Although much of the information is shrouded in time, enough remains to show that the country was firmly established as a significant metal producer at several distinct stages in history.

During the final Neolithic/Early Bronze Age (c.2400 - 1500 B.C.) Irish mines were an important source of copper, while alluvial gold may have been used for some of the abundant gold ornaments of this period. The 16th and 17th centuries were a time of extensive iron production, while the 19th century saw continuous copper, lead and silver output for over 70 years, as well as a 'gold rush' around the start of the century. And finally, the period since the 1960s have seen Ireland enjoy the status of a world-ranked producer of zinc, lead and barite, and become one of the most promising exploration territories in Europe.

Bronze Age

Although mining in Ireland started with the Mesolithic people who probably first settled here between 7,000 and 6,000 B.C., with evidence of extraction

sites for flint along the Antrim coast and porcellanite at Tievebullagh, Co. Antrim, metal mining was not until much later. The first evidence of mineral deposits as an important resource in Ireland after the Stone Age is to be found in Bronze Age times (c.2300 - 500 B.C.) or a little earlier. Recent research has established that primitive copper mines were worked in SW Ireland in the period c.2400-1500 B.C., with the

bulk of those dated during the period c.1700-1500 B.C. These mines were located both in mineralised quartz veins and sedimentary copper beds, as workings which rarely exceeded 10m in depth. Near-site smelting is likely, and the copper production made Ireland an important European producer of bronze axes and other utilitarian products during this time. The subsequent decline was probably due to the exhaustion of accessible mineralisation.



It is also likely that gold was first discovered during the Bronze Age, since there is reference to gold being found in c.1600 B.C. and worked at a site to the south of Dublin.

Pre - 18th Century

Few records remain of mining activity prior to the major period of mining in the 19th century. Sparse texts attest to iron working at Avoca in the 2nd century, to iron and copper mines in the 9th century, alum mining in the 12th century and lead-silver workings and copper mining around 1500. Better information exists for the 16th and 17th centuries however, which were marked by widespread iron production. Although iron ores were probably mined and smelted from shortly after the Bronze Age (500 B.C.), Irish production did not rise to prominence until this time, when iron became an important export to England. The ores worked were gossans from Avoca, carbonate ore (ëironstones) from the coalfields, haematite, and the widespread 'bog iron' ore. As charcoal sources were exhausted the industry declined. The last charcoal furnace closed in 1765. Lead and silver were also mined in the 17th century at several locations (e.g. Silvermines).

18th and 19th Century

The flowering of the metal mining industry in the late 18th and 19th centuries was triggered by the >>

<< growing needs of the Industrial Revolution in Britain. Copper mining boomed in SW Ireland, especially at Allihies, but there was considerable lead, copper (e.g. Avoca) and silver mining elsewhere, with almost every coastal county having at least one mine, based on high-grade low-tonnage vein deposits (e.g. Bunmahon).

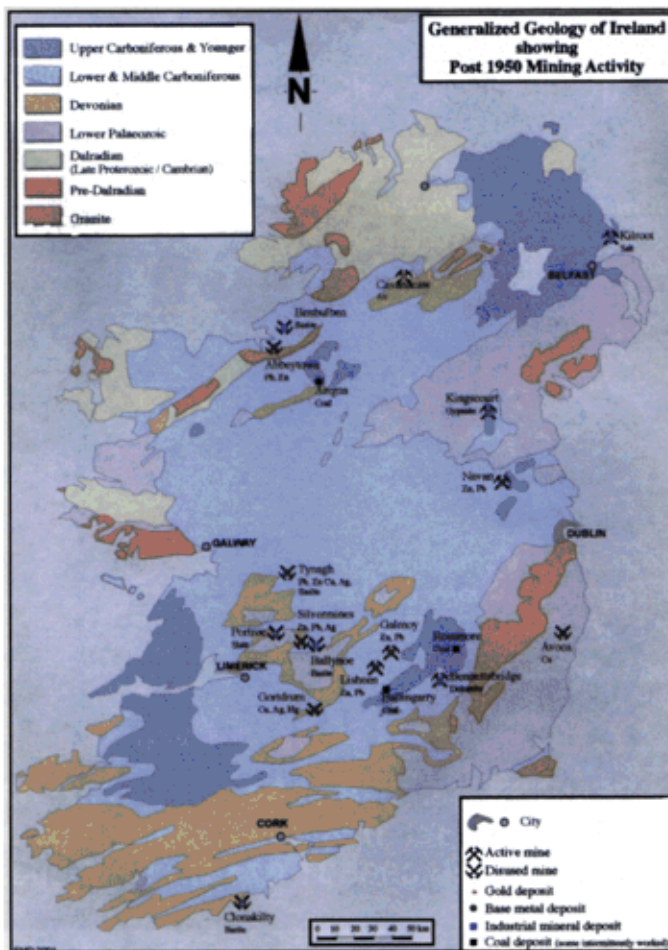
One of the richest lead mines was at Conlig and Whitespots, Co. Down, where mining between 1830 and 1864 reached a peak of over 1600 tons of lead ore, with over 150 miners employed. This period also saw the main phase of coal mining (Rossmore and Ballingarry areas) and slate quarrying as well as pyrite from Avoca and manganese and barite production from SW Ireland, with mining employment at levels never to be reached again.

Fortunes were made and lost, not least during the 'gold rush' between 1795 and 1830 at the Gold Mines River, where an estimated 7-9,000 oz of gold was extracted from alluvial gravels. This period also saw the start of a flourishing salt mining industry at Kilroot, where salt has been extracted from the 1850s to the present day.

20th Century

By the end of the 1880s however, a bleak period of some 70 years was to ensue. The exhaustion of deposits, falling metal prices and the lack of new discoveries saw the virtual cessation of metal mining. Up to the 1950s the only mining of note was a period of bauxite production in Northern Ireland, pyrite for sulphur from Avoca, and phosphate from the west of Ireland, reflecting economic demand during the war years, barite from Benbulbin (1942-1960) and gypsum mining from the Kingscourt area from 1936 onwards.

Coal mining continued from the Arigna, Rossmore and Ballingarry areas from thin seams, but output otherwise largely consisted of limestone for agricultural use and materials for the Irish construction industry. The stage however had been set for the finest period in Irish mining history. A



comprehensive Minerals Development Act (1940), followed by significant tax measures in the 1956 Finance Act, had a catalytic effect on mineral exploration by attracting a number of Canadian exploration companies to the country. Encouraged by the State discovery of economic reserves at the lead-zinc deposit in Lower Carboniferous rocks at Abbeytown (in production from 1950-1962), a surge of exploration focused in this stratigraphical level. Early confirmation of the existence of significant mineralisation came with the discovery of the Ballyvergin copper deposit in 1957, followed by the Tynagh zinc-lead-silver orebody in 1961. It was the discovery of this latter deposit in a geological setting which had not previously produced any significant mineralisation, that set off a chain of discoveries. In 1962 the silvermines zinc-lead orebody was discovered which became the largest underground zinc mine in Europe. This was followed by the world-class Ballynoe barite deposits, in its time the fifth largest barite producer in the

world, and in 1964 the Gortdrum copper-silver-mercury deposit was found. All of these became profitable mines.

Then in late 1970, the Navan deposit was discovered. Initial reserves for the deposit were almost 70 million tonnes grading 10% zinc and 2.5% lead, and production started in 1977. The discovery of the large tonnage Navan deposit put Ireland firmly on the international map and resulted in a high level of exploration in the country, with permits covering almost half the land area.

However, during the next twelve years, the efforts of the exploration companies resulted in what can only be described as technical successes. While a number of minor deposits (e.g. Tatestown, Courtbrown, Charlestown) were found, none were economic. This lack of success in the late 1970s led to many of the multinational exploration companies leaving Ireland. The resulting vacuum was filled by the formation of a number of junior Irish exploration companies, which

kept alive the flame of exploration in Ireland, at a time of depressed base metal prices and relatively little funding available for base metal exploration.

Fortunately, the discovery of the Curraghinalt gold prospect in Northern Ireland in 1983 proved that Ireland had real potential for bedrock gold. This and the high price of gold at the time enabled funding to be raised and led to a surge in gold exploration in Ireland between 1982 and 1988, with some success, notably the discovery of the Lecanvey and Cregganbaun deposits. However, in 1986, a more significant discovery was made, that of the Galmoy base metal deposit (6.18Mt, 11.31%Zn, 1.12%Pb). This sparked a revival in Ireland's base metal industry, resulting in the return to Ireland of a number of multinational companies. Further success followed in 1990 with the discovery of the Lisheen deposit (18.9Mt, 12.75%Zn, 2.2%Pb). Since then exploration has continued at a level which recognises that Ireland constitutes prime exploration territory, especially for base metals, and in particular for zinc.

Present Day

There is, however, more to Ireland than just zinc and lead. Gold exploration continues, with the first mine coming into production at Cavanacaw in Northern Ireland in late 2000. Current mining also includes gypsum at Kingscourt and salt at Kilroot, while deposits of talc, calcite, dolomite, fireclay, perlite, lignite, ballclay and roofing slate have all been located; several of these are likely to be developed in the near future.

This wide-ranging mineral heritage augurs well for the future of mining, although the once important coal industry is unlikely to figure again in the cast due to the exhaustion of economic reserves.

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