



MINING IN IRELAND THROUGH THE AGES



Stone Age (7000 BC to 2000 BC)

Evidence of excavation and mining occurred from as far back as the Stone Age, as shown by the discovery of Neolithic pottery, flint tools, scrapers, stone axes and arrow heads, such as the Danesford axe hoard, made from a rock called porcellenite, found in the Malone area of Belfast. These tools were used by Ireland's early inhabitants for farming and hunting.



Danesford porcellenite axe hoard



Bronze Age (2000 BC to 500 BC)

The Bronze Age marks the first period when metals were excavated and used. It also marks the evolution of urban civilisation. The technological leap from stone to bronze (which is a combination of copper and tin) allowed for more sophisticated manufacturing. Many of the materials needed were discovered in Ireland. Copper mining began at Ross Island, Killarney at the dawn of the Bronze Age and these mines are now recognised as the oldest in north-western Europe. Gold ornaments from this period have been discovered in several other locations across Ireland, but the source of the gold is not certain.



Bronze sword, Ballyharney, Co Westmeath



Tullydonnell Hoard, Convoys, east Donegal Late Bronze Age gold pieces discovered in 2018



Iron Age (500 BC to 500 AD)

Iron ore melts at the very high temperature of 1538°C. Mass production of items began in the Iron Age as metal working skills evolved to the smelting of iron, which was more readily available than bronze as well as being stronger and more durable. Sparse records attest to iron mining at Avoca (Co. Wicklow) in the 2nd century. The period coincided with the arrival of Celts in Ireland.



Bronze Disc in the La Tène style



Middle Ages (500 AD - 1500 AD)

It was the Middle Ages that saw the start of mining proper. Over a period of roughly 1000 years, mining skills developed and the industry began to employ techniques that are still in use in modern mines. Water power allowed mining below the water table and blast furnaces became more widespread. There are records of iron and copper mines in Ireland in the 9th century, as well as lead-silver workings and copper mining around 1500 AD.



Map of Silvermines, Co. Tipperary, showing two mine entrances and a foundry. Published in 1681



Industrial Revolution (18th -19th centuries)

The Industrial Revolution in the 18th and 19th centuries saw the manufacture of iron and steel increase rapidly in order to meet the demand for rail, shipbuilding and factories. Furnaces required charcoal which was sourced from native forests, and this was later replaced by coal. In Ireland coal mining began in the 17th century and has been carried out in counties Antrim, Kilkenny, Roscommon, Tipperary and Tyrone. Iron ore was mined extensively across Antrim from the mid-19th century until the 1920s. Lead mining commenced in the middle of the second millennium at Silvermines, Co. Tipperary and elsewhere, and it expanded during the middle of the 19th century across Ireland, most notably at Luganure, Co. Wicklow and Conlig, Co. Down. At Carrickfergus in Co. Antrim salt extraction began in the mid-19th century and still continues today. A copper mining boom across the south of the country included mines at Allihies Co. Cork, Avoca Co. Wicklow and Bunmahon Co. Waterford.



World Wars (1914-18, 1939-45)

An increase in demand for lead, antimony and other metals was driven by the First and Second World Wars. The Clontibret antimony mine in Co. Monaghan was opened briefly in 1917 and historic mines of bauxite, an aluminium ore, reopened in Co. Antrim between 1940 and 1945 as the only source of aluminium in the UK for use in aircraft production. The first Minerals Development Act in Ireland was brought into effect in 1940 to improve how mineral exploration and mining would be regulated.

Modern Times

The latter half of the 20th century saw a rise in the use of products derived from oil but, in Ireland, metal mining became a leading economic industry. The discovery of major zinc and lead deposits in the Irish midlands resulted in Ireland becoming the leading producer of zinc in Europe. Mines were located at Abbeytown Co. Sligo (1950 – 1961), Tynagh Co. Galway (1965 - 1980), Silvermines Co. Tipperary (1968 – 1982), Navan Co. Meath (1977 – ongoing), Galmoy Co. Kilkenny (1997 – 2012), Lisheen Co. Tipperary (1999 – 2015). Other operations included copper mining at Gortdrum, Co. Tipperary (1967-1975) and the largest barytes, or barium ore, mine in Europe at Silvermines (1963-1993). In Co. Tyrone, Galantas began mining gold in 2012 and although currently not operating, the area remains a focus for further gold mine development.

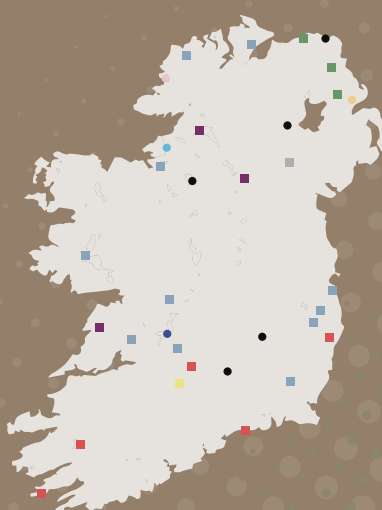
Mining in Ireland continues to the present day with the Tara Mine, operated by Swedish company Boliden at Navan, Co. Meath, being the largest zinc mine in Europe now 1,000m deep. Ireland is a major international source of zinc, ranking fourth in Europe for zinc production in 2019. The Republic of Ireland and Northern Ireland are consistently ranked highly in terms of Investment Attractiveness (Fraser Institute, 2021) for mineral exploration, currently 2nd and 6th in Europe respectively. The salt mine at Carrickfergus, Co. Antrim, operated by Irish Salt Mining and Exploration, has been in operation since 1965. Gypsum mining by a Saint Gobain group subsidiary also continues in Co Monaghan, with operations dating from 1936.

Ireland has a long history of mining which has helped to shape our lives and those of our ancestors down through the ages. Society by its nature does not stand still. Consumer needs evolve, businesses respond and new products are being developed all the time. Mining is an integral part of the advance in modern life - what happens in the future all depends on where minerals can be found by Ireland's skilled exploration geologists, leading to the development of the next generation of mines and minerals required for future use, including the green economy.

In the past, some mining activities caused significant impacts on environmental quality and surface stability in Ireland. Closed mine waste sites have been documented and assessed as part of the Historic Mining Sites project and certain sites continue to be monitored by the Department of the Environment, Climate and Communications. In Northern Ireland an inventory of all historic mines sites has been recorded and all are subject to routine monitoring by Department for the Economy. Modern mining operations are subject to rigorous health, safety and environmental standards and regulations.

LEARN MORE

See Factsheet on Mining Planning and Environmental Oversight to learn more about modern mining and closure practices.



Historic Mining Districts (Pre-1960s)

Historic (pre-1960s) Mine Districts in Ireland

- Coal
- Ba
- Cu (-S)
- Cu-Ag-Hg
- Fe
- Pb (-Zn-Ba-Ag)
- Pb (Zn-Ba-Ag), Sb
- Phosphate
- Slate
- Talc
- Iron Ore, Bauxite
- Pb
- Salt

References:



Environmental Protection Agency and Geological Survey of Ireland (2009) *Historic Mine Sites - Inventory and Risk Classification Volume 1*

www.epa.ie/pubs/reports/land/mines/