

FINDING IRISH GOLD: PAST, PRESENT AND FUTURE

by Wayne Cox



The recent rise in the price of gold, coupled to renewed positive sentiment towards investment in the junior resource market has resulted in a dramatic upsurge in gold exploration worldwide. This trend has also been mirrored in Ireland, which is currently witnessing the most vibrant gold exploration scene since the heady days of the mid to late 1980s. In light of this renewed interest, it is timely to review Ireland's "golden" heritage and draw attention to those areas that are currently the focus of significant exploration activity.

THE GOLDEN AGES

In broad terms, Ireland's history of gold exploration and exploitation can be divided into three main phases; the Bronze Age (2000 - 400 BC), an "historic" period (17th - 19th century) and the modern era (1980-Present).

THE BRONZE AGE (CIRCA 2000 TO 400 BC)

A large number of prehistoric gold ornaments, belonging mostly to the Bronze Age, have been discovered throughout Ireland. The collection of the National Museum of Ireland is arguably the finest in Europe, housing more than 500 objects of gold work. The source of the gold used to fabricate these artefacts has been the subject of considerable speculation. Up until the late 1970s, the consensus of opinion was that the gold was imported into Ireland, based largely on metallurgical evidence. However,

there is now strong circumstantial evidence to suggest that the gold used in fabricating the ornaments was mined in Ireland. This evidence includes:

- The discovery of implements for melting and casting gold (together with gold ornaments themselves) in the Bog of Cullen, on the borders of counties Tipperary and Limerick.
- A description in the Annals of the Four Masters (1632) which refers to the discovery of gold in Ireland around 1600 BC and the smelting of the metal, in the forests south of Dublin. This location corresponds generally with the only site from which gold is known to have been commercially exploited in Ireland, the Gold Mines River area of Co. Wicklow (see below).
- References in numerous historic documents that attest to gold being won from stream gravels across Ireland.
- Recent exploration which has demonstrated that gold occurs in significant quantities at numerous sites throughout Ireland.

The hypothesis that gold was mined from Ireland during prehistoric times remains unproven. However, it is hoped that new insights into the gold source may be revealed by currently ongoing research utilising modern geochemical fingerprinting techniques.

THE "HISTORICAL" PERIOD (18TH - 19TH CENTURY)

Very little evidence exists for the recovery of gold in Ireland up until the late 18th century. Alluvial gold was reported in

1652 from the Moyola River in Northern Ireland and subsequently in 1753 from copper ores at Avoca. In September 1795, one of the most significant events in Irish mining history took place, when it became known that streams below Croghan Kinshelagh (2-3 kilometres southwest of Woodenbridge, Co. Wicklow) contained appreciable quantities of alluvial gold. A local gold rush ensued with hundreds of people making their way to what is now called the Gold Mines River area, to secure themselves a share of the riches. Crude gold washing operations persisted for six weeks during which time at least 800 ounces of gold is estimated to have been recovered, including one large 22 ounce nugget. The Government subsequently took action, sending in an armed force to occupy the valley and disperse the gold diggers. Further mining was carried out by the Government (1796-1803), the local populace (1804-1839) and then a private company in 1840. Significant amounts of gold were extracted during these periods, but since then only very small amounts are known to have been recovered. The total gold output of the district since 1795 has been estimated at between 7000 and 9000 ounces. Attempts to locate the bedrock origin of the gold remain unsuccessful, and even today the gold source remains a matter of conjecture.

A small number of late 19th and early 20th century reports further document the presence of gold elsewhere in Ireland. There are however, no records of gold production from any of these sites.

THE MODERN ERA (CIRCA 1980 - PRESENT)

Throughout much of the post war era, gold prospecting in Ireland was overshadowed by exploration for base metals, particularly following the discovery of the zinc-lead deposits at Tynagh and Silvermines in the early 1960s. During the 1980's however, the exploration focus switched from base metals to gold, in response to a number of circumstances:

1. International political and economic factors led to a dramatic increase in the price of gold and a corresponding downturn in base metal prices. As a consequence of this, several major base metal companies were forced to withdraw from Ireland

2. The relative ease in raising funds for gold exploration. This enabled numerous small Irish exploration companies ("Juniors" in Canadian mining parlance) to obtain financial backing and acquire open ground surrendered by the majors.

3. The relatively low cost of grassroots gold exploration. As Ireland was little explored for gold, juniors could embark on meaningful exploration programmes within their financial capability.

4. The discovery of gold deposits in Scotland. This prompted exploration companies to prospect for gold in similar geological terrains in Ireland. The discovery in 1983 of outcropping gold-bearing quartz veins in the Sperrin Mountains of Co. Tyrone confirmed the prospectivity of certain Irish geological environments and resulted in a significant uptake of prospecting licences across the island of Ireland.

The net effect of the factors outlined above, was a phenomenal expansion in gold exploration activity. Gold mineralization was identified in a diverse range of geological terrains, providing further exploration encouragement. The dramatic escalation in gold exploration in Ireland was reflected in the number of prospecting licences (PLs) issued by the State for gold. In October 1982, only five PLs covering an area of 170 km² were held, centred on the Clontibret prospect of Co. Monaghan. By early 1989, more than 350 licences had been issued, occupying some 12,000 km² and 18% of the Republic's total land area. More than 130 gold occurrences were identified in Ireland, including six small gold deposits (Figure 1).

At the onset of the 1990s, there was widespread confidence that several of the newly discovered gold prospects would move into production. Instead however, the 1990s witnessed a virtual cessation of gold exploration in Ireland in the face of falling gold prices and environmental concerns over gold mining. Subsequent zinc-lead discoveries at Lisheen (1990) and Galmoy (1986) has again led to base metals usurping gold as the principal exploration focus in Ireland.

THE CURRENT SITUATION

Rising gold prices and increased investor confidence has recently resulted in a resurgence in Irish gold exploration. There is now considerable interest in several of the deposits identified during the 1980s. Galantas Gold Corporation have been granted permission to develop an opencast gold mine at Cavanacaw in Co. Tyrone and already some gold has been produced. There

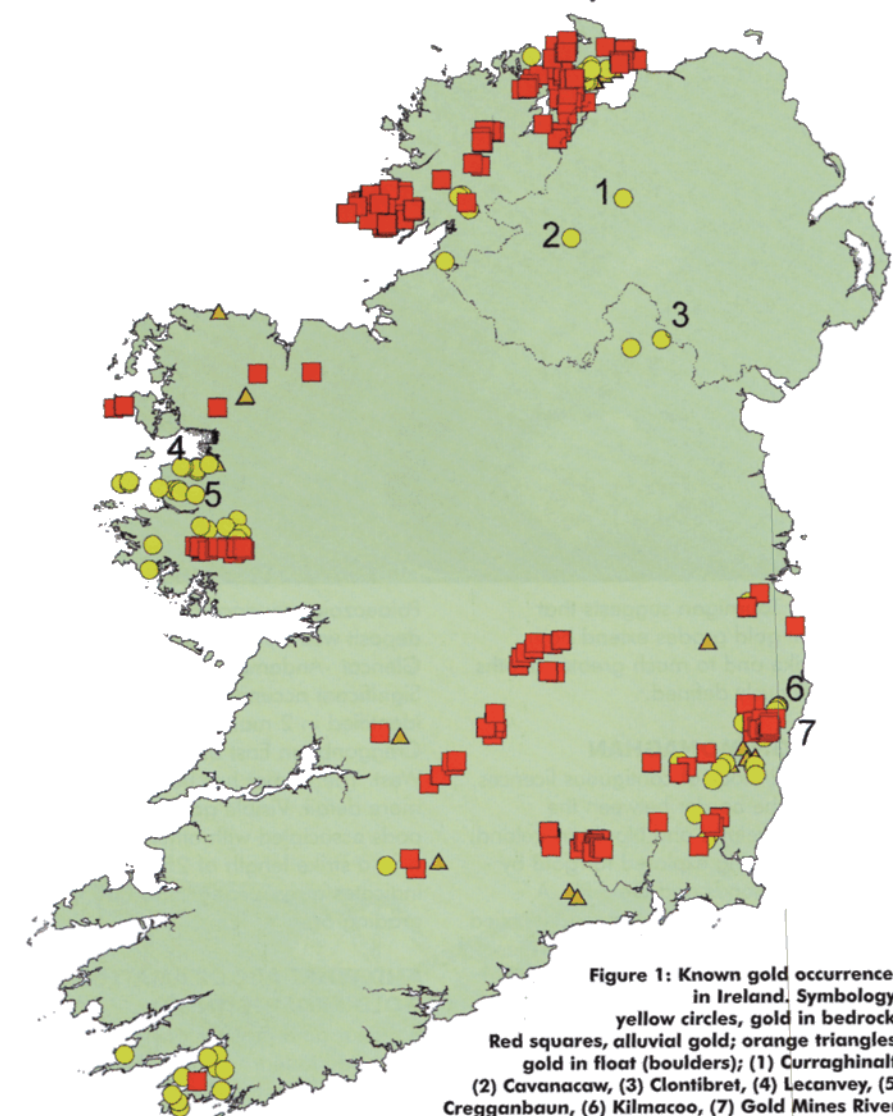


Figure 1: Known gold occurrences in Ireland. Symbology: yellow circles, gold in bedrock; Red squares, alluvial gold; orange triangles, gold in float (boulders); (1) Curraghinalt, (2) Cavanacaw, (3) Clontibret, (4) Lecanvey, (5) Cregganbaun, (6) Kilmacoo, (7) Gold Mines River.

are high hopes that a second gold deposit at Curraghinalt, Co. Tyrone, will also shortly move into production. The Republic of Ireland too, appears to be experiencing an increase in gold exploration activity. Since May 2004, 14 new prospecting licences have been issued for gold to Aurum Mineral Resources. Nationwide, a total of 18 licences are now held for gold and a further 129 for gold plus other metals (Figure 2). This exploration focus is principally in Counties Cavan, Donegal, Galway, Limerick, Mayo, Monaghan, Tipperary, Wexford and Wicklow.

GOLD "HOTSPOTS"

1. CAVANACAW (CO. TYRONE, N. IRELAND)

This deposit was discovered by Riofinex in late 1987, 5km southwest of Omagh. Gold mineralization occurs in numerous steeply dipping quartz veins and shear zones hosted within Dalradian age metasediments. Following detailed

exploration, including 4000m of trenching and a 12,820 metre drilling programme, Riofinex established a resource of 2Mt grading 6.9g/t Au. The property is currently being evaluated by Galantas Gold Corporation who propose working gold from a small open pit, for use in fabricating certified Irish gold jewellery.

2. CURRAGHINALT (CO. TYRONE, N. IRELAND)

The discovery in 1983 by Ennex International Plc. of gold mineralization at this site in the Sperrin Mountains helped trigger the 1980s gold boom. Gold is associated with pyrite in steep-dipping quartz veins. Drilling and over 700m of underground development by Ennex outlined a measured and indicated resource of 470,000t grading 17g/t Au (255,000 ounces of gold). The property is currently licensed to Ulster Minerals Ltd., a 100% owned subsidiary of Tournigan Gold Corporation. Recent



drilling by Tournigan suggests that significant gold grades extend both along strike and to much greater depths than previously defined.

3. ARMAGH-MONAGHAN

A 1500km² block of contiguous licences, straddling the border between the Republic of Ireland and Northern Ireland, is presently being explored for gold by Conroy Diamonds and Gold Plc. A number of prospects have been identified by Conroy, and it is their view that these prospects form part of an extensive gold bearing system known as the Armagh-Monaghan Gold Belt. The best explored prospect occurs near Clontibret. Here, gold mineralization is associated with arsenopyrite-stibnite veins, that were historically worked for antimony.

4. LECANVEY (CO. MAYO)

Widespread alluvial gold was first identified in South Co. Mayo by Tara Prospecting Ltd. in 1984. Intensive follow-up prospecting by Burmin Exploration/Tara resulted in the discovery of potentially economic gold mineralization at Lecanvey on the flanks of Croagh Patrick. The gold is hosted in quartz veins cutting Lower Palaeozoic quartzites. A geological "reserve" of 498,000 t grading at least 9.94 g/t Au was delineated by drilling in the late 1980s. However, given the religious and cultural significance of Croagh Patrick, the Minister for Energy decided in 1990, not to renew the Prospecting Licence over the area of the Lecanvey deposit. No exploration has subsequently been permitted in the area.

5. CREGGANBAUN (CO. MAYO)

This deposit is hosted in an east-west shear zone that transects the Lower

Palaeozoic sequence of South Mayo. The deposit was discovered in 1988 by the Glencar -Andaman joint venture. Significant accumulations of gold were identified in 2 main zones: Cregganbaun East and Cregganbaun West. The former has been explored in more detail. Visible gold occurs in quartz pods associated with other sulphides over a strike length of 250m. Drilling indicates a resource of 530,000 t grading 6g/t.

AND WHAT ABOUT AMATEUR GOLD PROSPECTING?

Amateur gold prospectors will be interested to learn that gold can be panned in many of the streams of Ireland. A few hours perseverance could reveal a few grains of Irish gold. No permit is required to pan, but anyone doing so should bear in mind that all gold belongs to the state. All that is needed is a pan, shovel, hand-lens/magnifying glass and of course some patience. The location of many sites from which alluvial gold has been recovered is included on a "Gold in Ireland" interactive CD. This free CD, produced jointly by the Exploration and Mining Division and the Geological Survey of Ireland, also contains information of interest to the professional explorationist, including:

- Information on over 300 gold occurrences in Ireland
- Geological descriptions of the most significant deposits
- A bibliography of Irish gold references
- A selection of papers on Irish gold mineralization
- Various spatial (GIS) datasets including bedrock, float and alluvial gold occurrences, simplified 1:600,000 geology map of Ireland, licence

boundaries and prospectivity maps for a range of gold plays.

WANT MORE INFORMATION ON GOLD IN IRELAND?

For more information on gold exploration opportunities in Ireland, or to obtain your free "Gold in Ireland" CD, please contact:
Exploration and Mining Division,
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Email: emdtechnical.info@dcmnr.gov.ie

SOME USEFUL REFERENCES

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Wayne Cox is a graduate of the University of Leeds (B.Sc. Geological Sciences, 1990) and the University of Leicester (M.Sc. Mineral Exploration and Mining Geology, 1991). He subsequently completed a Ph.D. on low temperature mineralization in Southwest England at Kingston University. He worked in the mineral exploration industry in both Chile (copper) and Zimbabwe (diamonds) before taking up employment as a project geologist in the Minerals Section of the Geological Survey of Ireland. Since early 2000, Wayne has worked as a geologist in the Exploration and Mining Division. He is the current Secretary of the Irish Association for Economic Geology, a Director of the Mining Heritage Trust of Ireland, and in 2003 was co-opted onto the council of the IMQS.