

Parc Metal Mine

Wales Metal Mines Programme



Background

Abandoned metal mines cause significant pollution in Wales, harming river ecology with metals like cadmium, lead, zinc and copper. There are approximately 1,300 abandoned metal mines across Wales that have been estimated to impact over 700 km of rivers.

Natural Resources Wales (NRW) and the Mining Remediation Authority (MRA) are working together on the Wales Metal Mines Programme to address this polluting legacy. The Programme is funded by Welsh Government.

The primary aim of the Programme is, where technically and financially feasible, to reduce pollution from abandoned metal mines to improve the health of our rivers, benefiting the environment, people and the economy.

In doing so, this will directly contribute to the sustainable management of natural resources in Wales (SMNR) and enhance community well-being benefits, as detailed in the Environment (Wales) Act 2016 and the Well-being of Future Generations (Wales) Act 2015.

Project Context

Parc Mine (or just 'Parc') is located in the Gwydir Forest within Eryri National Park, approximately 1.6 km southwest of Llanrwst. It is interconnected below ground with eleven other mines, and is the main discharge point for mine water from these extensive underground workings.

Parc has been identified as a major source of metals to the Nant Gwydir and the Afon Conwy, contributing to the water body failing to meet the standards required by the Water Framework Directive. Our monitoring estimates that approximately 3,600 kg of zinc, 67 kg of lead and 17 kg of cadmium enter the environment each year.

These ecotoxic metals cause significant environmental and ecological damage, reducing fish populations and the diversity of invertebrate fauna.

Parc is one of our priority projects, with the primary objective to reduce this pollution. There are numerous environmental sensitivities that the project must consider, including heritage features and sensitive habitats and we aim to work proactively with stakeholders, including communities and special interest groups, as we seek a solution.

Project Progress

Over the past few years we have been gathering information to better understand the pollution sources from Parc, and to identify potential remediation options.

In 2020 a review of mine water hydrology was undertaken which indicated a low risk of sudden release of mine water from Parc Adits 3 and 4. This review recommended additional work to improve our understanding of the mine system.

We subsequently installed flow monitoring structures on four adit discharges, three outflows from a reclaimed tip and on the outfall of the reservoir Llyn Fuches Las. We are continuing to monitor the water quality and flow at key locations around the mine.

We have completed archaeological and ecological assessments and commissioned a Scoping Study to identify a long list of possible mitigation options to improve the water quality in

the Nant Gwydir and Afon Conwy.

It is likely that a combination of the high-level mitigation options presented below, will be needed to successfully manage the range of pollution sources at Parc.

We welcome your input as we continue to develop our options, and seek to identify opportunities for environmental, social and economic scheme enhancements.



Mining Heritage and Ecology

Parc sits within the Gwydir Forest which is an area of high archaeological and ecological sensitivity and interest, often relating to legacy mining-associated features.

These include ecological features of interest within the Mwyngloddiau a Chreigiau Gwydir Site of Special Scientific Interest (SSSI) and Mwyngloddiau Fforest Gwydir / Gwydir Forest Mines Special Area of Conservation (SAC).

These areas are designated for the lesser horseshoe bat and a number of rare plants that grow on the metal-rich mine spoil heaps, including nationally rare lichens and lower plants which form 'Calaminarian Grassland' habitat.

A number of heritage features are present at Parc and one of these, Kneebone's Cutting, is considered to be of national importance because it represents evidence of early mining on the site.

The mine itself is considered to be of regional importance, representing the significant lead mining industry in the Gwydir Forest. Hafna Lead Mine and Vale of Conwy Lead Mine are Scheduled Monuments and are located close to Parc.

Next Steps

We will now undertake a Feasibility Study to assess the technical, environmental and economic suitability of the possible mitigation options. This will lead to a short list of feasible options from which a preferred remediation strategy for the site will be selected.

It is likely that this will be a phased strategy, targeting specific pollution sources over a number of years, allowing design, construction and then assessment of each intervention.

We would like the local community and other stakeholders to play a key part in this process. We will be holding public consultation events later in the project, and issuing further newsletters to communicate progress.

An indicative timeline is presented below, which is subject to securing the required funding.



Possible Mitigation Options



Mine water treatment



Erosion controls



Other diffuse pollution management



Groundwater management



Surface water management



To date

Defining the problem

Baseline surveys and water quality monitoring to inform a Scoping Study and long list of mitigation options.

2025

Short List Options

Feasibility Study to assess long list options and identify a suitable short list of possible mitigation options.

2026 Onwards

Preferred Remediation Strategy

Development of the preferred Remediation Strategy for the site with ranked mitigation options for further consultation.

2026 Onwards

Construction and assessment

Design and construction of the highest ranked mitigation option, followed by assessment of its impact on water quality.

Keeping in touch and how to get involved

We want to hear from you as we progress the Parc Mine Project and explore the wider environmental and social opportunities that can be developed as part of the preferred strategy for this site.

Explore more about the Parc Mine Project as well as the wider Wales Metal Mines Programme by using the following links below:



bit.ly/ParcMine



bit.ly/MetalMineWaterPollution

If you'd like to share your views, be added to an email mailing list, or have any questions please get in touch on the details below:



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Old mines are dangerous places with many hidden hazards. Many of our projects are located on private land where public access is not permitted without landowner approval.