Heavy metal pollution from mining activities

Exposure to high amounts of certain metals can result in harmful effects for both wildlife and humans. Human activities, such as mining operations, have released large amounts of these metals into the environment, greatly increasing the risk of metal toxicity problems for local populations. To develop successful strategies to protect the public against the risk of metal toxicity, it is important to understand how people are exposed to these metals, and how these metals are mobilized in the environment in the first place.

In this activity, you will learn;

* What is meant by the term ‘heavy metal’ and why they are considered important water quality parameters.
* How people are exposed to heavy metals and how can metal toxicity risks be identified and estimated,
* What the main processes related to mining operations are that result in the pollution of rivers with heavy metals, and the importance of acid mine drainage,
* The remediation options to address acid mine drainage and their underpinning scientific concepts.

The activity is split into 3 parts, each with a 30 minute lecture followed by a 40 minute practical session. In the practical, you will put into practice the knowledge gained from the lectures to assess the toxicity risks of heavy metal exposure, the role of mining activities for polluting a hypothetical river system, and discuss the advantages and disadvantages of potential remediation options.