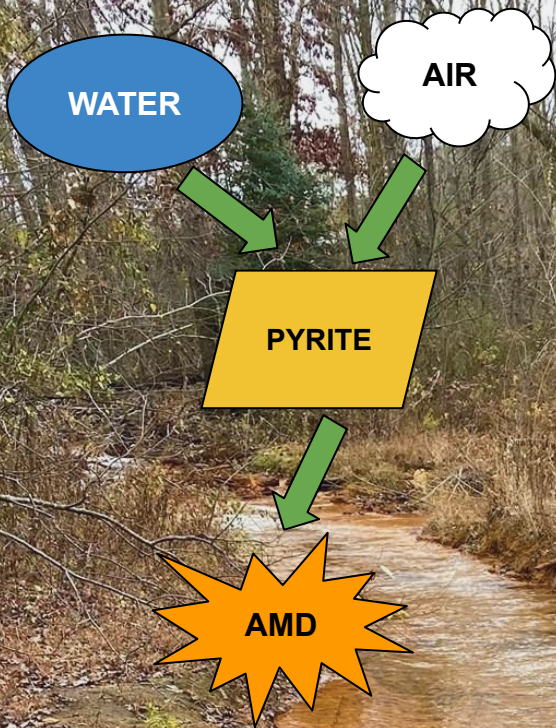
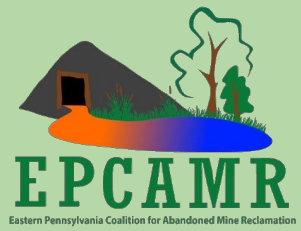


Acid Mine Drainage (AMD) and Remediation



What is AMD?

Acid Mine Drainage (AMD), at its most basic level, is water that flows through coal mines, interacts with the rock inside of mines, and flows from surface features like seeps, boreholes, and tunnels.

How does it happen?

Acid Mine Drainage occurs when minerals like Pyrite (Fool's Gold) are exposed to water and air to undergo a chemical reaction called oxidation. The end result is heavy metal (ex. iron oxide) sedimentation at the bottom of our rivers, streams, and tributaries.

AMD really gets under my gills!



Acid Mine Drainage (AMD) and Remediation



Are there environmental risks?

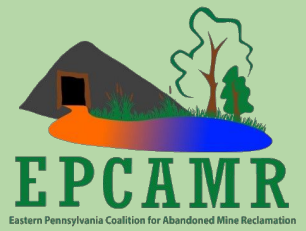
Acid Mine Drainage (AMD) raises the iron levels and lowers pH in streams. When water reacts with minerals inside coal mines, they release sulfuric acid and dissolved iron. These two things make it very hard for fish and macroinvertebrates spawn and thrive in streams.

How can it be fixed?

AMD can be fixed by creating active water treatment systems or passive systems with vegetation that can help to remove the iron and acid from water over time. AMD will pass through aerators or a series of ponds with plants that allow the iron to settle out and can be harvested or it will adhere to the plant's root systems.

Acid Mine Drainage (AMD) - Sulfide Mining in the Boundary Waters

Acid Mine Drainage (AMD) and Remediation



Other pollutants?

Not all AMD is created equal! Some is net neutral or alkaline. Other heavy metals like Aluminum also occur in AMD, and cause different problems. Dissolved aluminum sticks to fish gills which chokes them to death and creates a white-gray precipitate on streambeds.

Other names for AMD:
Abandoned Mine Drainage
Acid and Metalliferous Drainage
Alkaline Mine Drainage
Acid Rock Drainage (ARD)
Mine Drainage (MD)

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