

#### **Environmental Education**

We believe that one of the best tools to build up our communities is through place-based education. We focus on educating youth and citizens who live within our often underserved and underrepresented coal communities. EPCAMR works with schools, colleges, universities, and after-school programs to promote environmental stewardship within our communities.



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#### We cover topics like:

- Watersheds
- Stream Health
- Pollution Solutions
- Mine Reclamation
- Wildlife and Fishery Habitats
- Water Pollution Control
- Treatment
- Alternative Clean Energy

(Above) EPCAMR hosts a nature walk with local youth at the Penobscot Ridge Mountain Bike & Hiking Trail on a reclaimed abandoned mine site.

(Right) EPCAMR shows Lackawanna College students the "Bliss Banks" reclamation project.



### Abandoned Mine Reclamation

(Left) Efforts to reclaim the Swoyersville Culm Pile are ongoing amongst EPCAMR and many other mine reclamation groups/agencies.

> EPCAMR's main mission is to reclaim abandoned mine lands previously impacted by past mining practices.

Abandoned Mine Reclamation is multiple parts:

- Removing hazards from abandoned mine lands
- Replacing waste coal and rock with plants, trees, and soil
- Preventing soil erosion and improving water quality
- Restoring land so that it can be reused by communities
- Engaging community members to help beautify illegal dumpsites

(Right) EPCAMR builds capacity within our coalfield communities by coordinating local volunteer cleanups at illegal dumpsites and recruiting local partners.





AMD Treatment System

Monitoring & Maintenance

**Biological & Macroinvertebrate Assessment of Watersheds** 

> **GIS Data Analysis & Mapping Services**

#### **Technical Assistance**

**EPCAMR** provides professional technical services to nonprofits, state and local agencies, community organizations, and consulting firms who ask for our knowledge and expertise.

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> > Water Flow & Chemistry Monitoring of AMD Treatment Systems



### **Comprehensive** Watershed Assessments

**EPCAMR** has a more holistic view of our community's ecosystem and makes recommendations for improvements that will benefit the water quality, quantity, and fishery of a watershed.

Field Assessments of watersheds are essential to developing plans to address and restore key environmental issues, including aquatic organism passage and culvert assessments.





With the data gathered from field and GIS assessments, EPCAMR can make recommendations to municipalities and other agencies





### **Dam Removal & Stream Restoration**

(Left) EPCAMR staff and volunteers remove a beaver dam within the **Black Creek Watershed.** 

#### **Restorations include:**

- Streambank stabilization
- Litter removal
- **Culvert/Bridge replacement**
- Dam removal
- J-Hook, Cross Vane installation
- **Treatment System installation**
- **Riparian buffer and Tree Plantings**
- Wetland Habitat Restoration





**Stream restoration projects** are necessary to reduce erosion and sedimentation. remove barriers that inhibit aquatic passage of fish, and stream flow.

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#### **GIS** Data Analysis and **Mapping Services**

**Geographic Information Systems (GIS)** allow us to use computers to create models of our natural world. EPCAMR uses GIS to take measurements, create data and map our local environments to better understand and protect them. A large part of our work involves creating 3D models of mine pools. (Above and Below)

(Above) Frank Sindaco rolls out a mine map to be scanned and digitized.



# **Drone Services** 0.0



**FLIR Imagery** of the Centralia underground coal mine fire. (Centralia, PA)

Centralia, PA

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Drones are on the cutting edge of environmental conservation. EPCAMR uses drones to measure the area of reclamation sites, determine the locations of mine fires and Abandoned Mine Drainage sources, and scout out illegal dumping grounds.

An overview of the Swoyersville, PA coal refuse pile on the site of the historic Harry E. Colliery

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