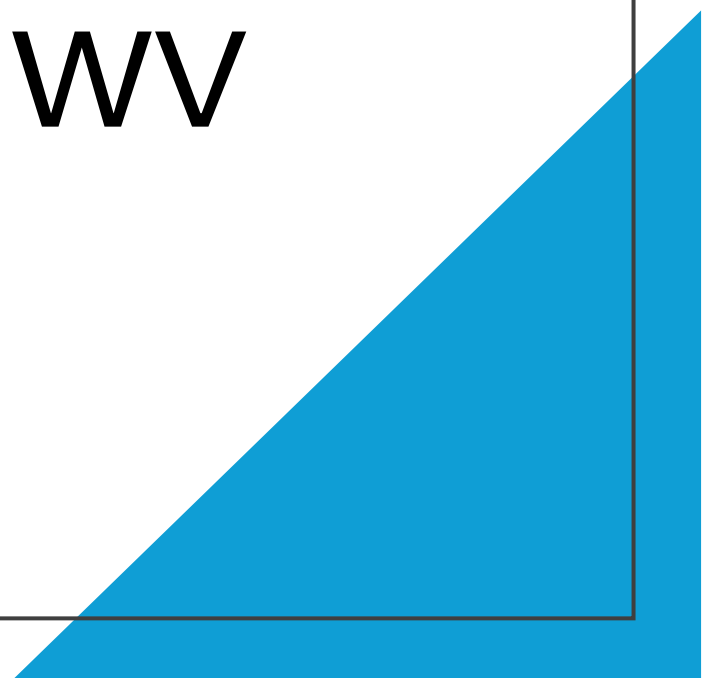


Evaluating Benthic Habitats and Sedimentation in the Headwaters of Deckers Creek, Preston County, WV

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Overview

Project Summary

Study Area and Background

Site Characteristics and Monitoring

Habitat improvement structures

Project Summary

- After Acid Mine Drainage (AMD) restoration, diverse benthic macroinvertebrate and fish populations are slow to return, even after the metal hydroxides wash away and water quality indicates it can support a diverse aquatic ecosystem.
- This study will use water quality data, bank erosion rates, benthic macroinvertebrate assessments, and stream cross sectional surveys as metrics to implement in-stream habitat improvement structures.
- Monitoring these parameters pre and post habitat improvements will be used to determine success of biological return to fully functional ecosystems.
- Our findings, including any noted limitations to biological return, will be used as recommendation for habitat improvement structures to be employed alongside water quality improvement systems for future AMD remediation efforts.



Purpose

- Sedimentation and erosion heavily impact stream biological health and recovery
- What steps can be taken to ensure healthy streams and fisheries thrive in areas of adequate water quality?



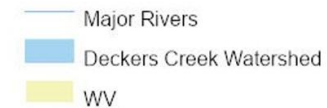
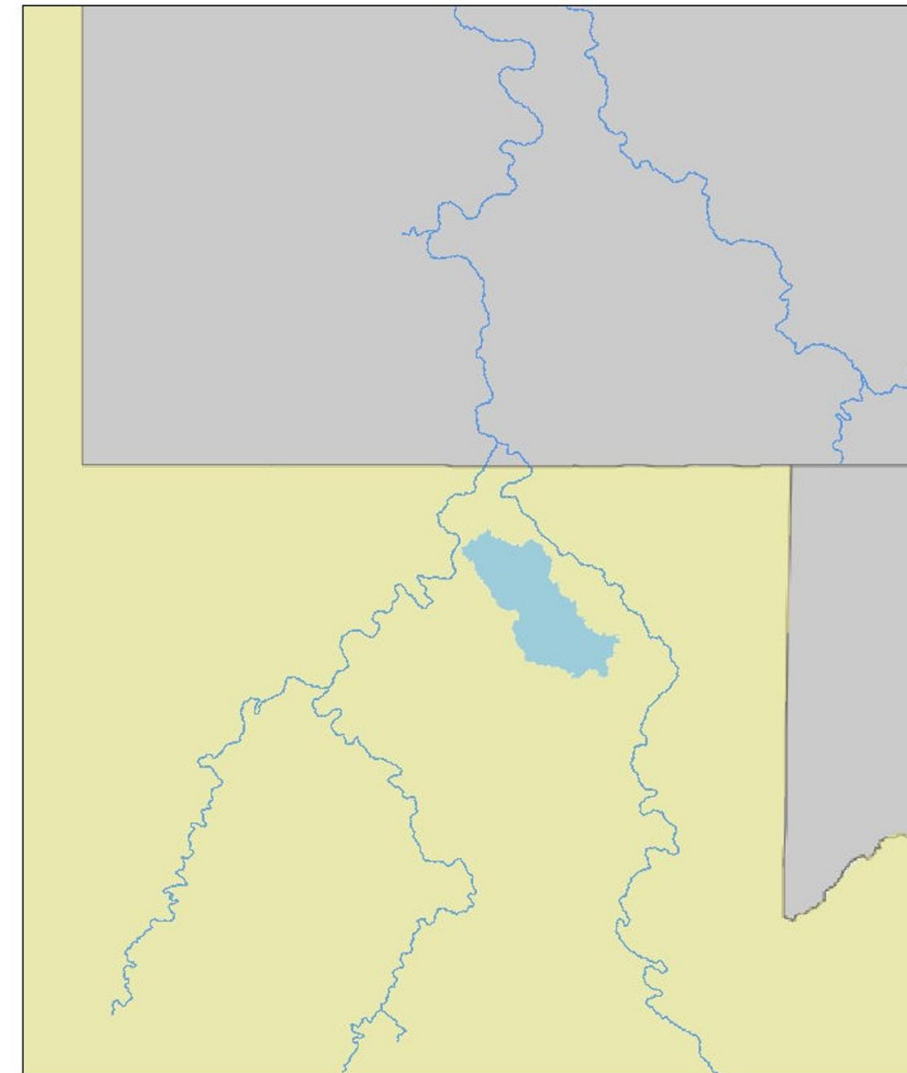
Goals

- Pre-installation monitoring of study site
- Implement habitat improvement structures
- Post-installation monitoring
- Generate recommendations

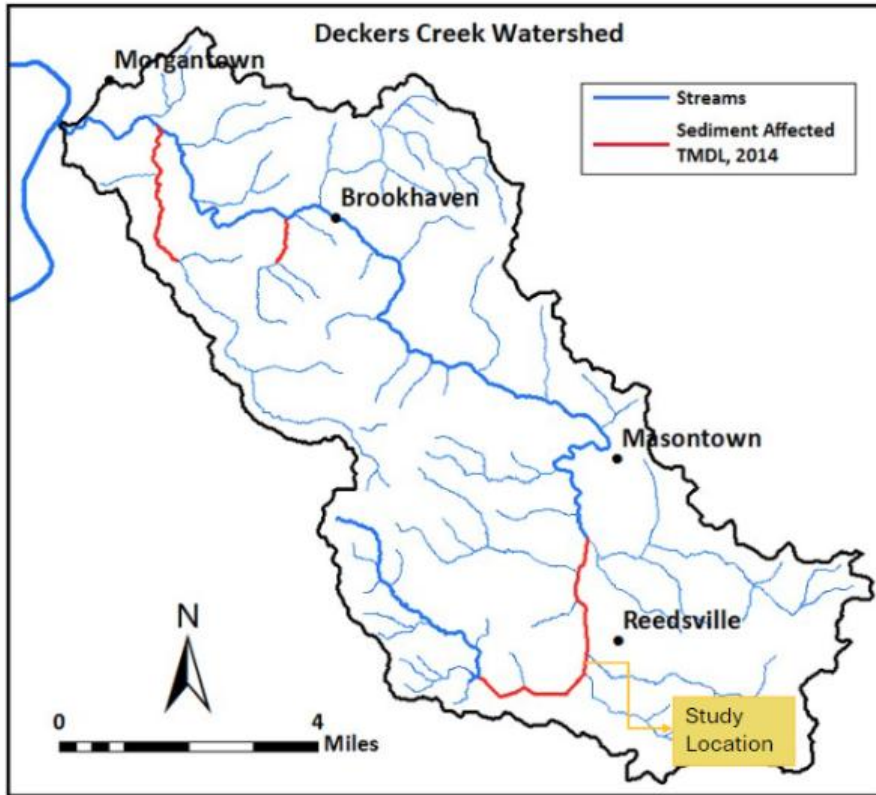


Site Selection

- Deckers Creek was selected for the long-term monitoring and habitat restoration efforts to be completed under this project.
- This portion of Deckers Creek (headwaters) is significantly impacted by sedimentation and was channelized in the early-1900s for flood mitigation and agricultural land.



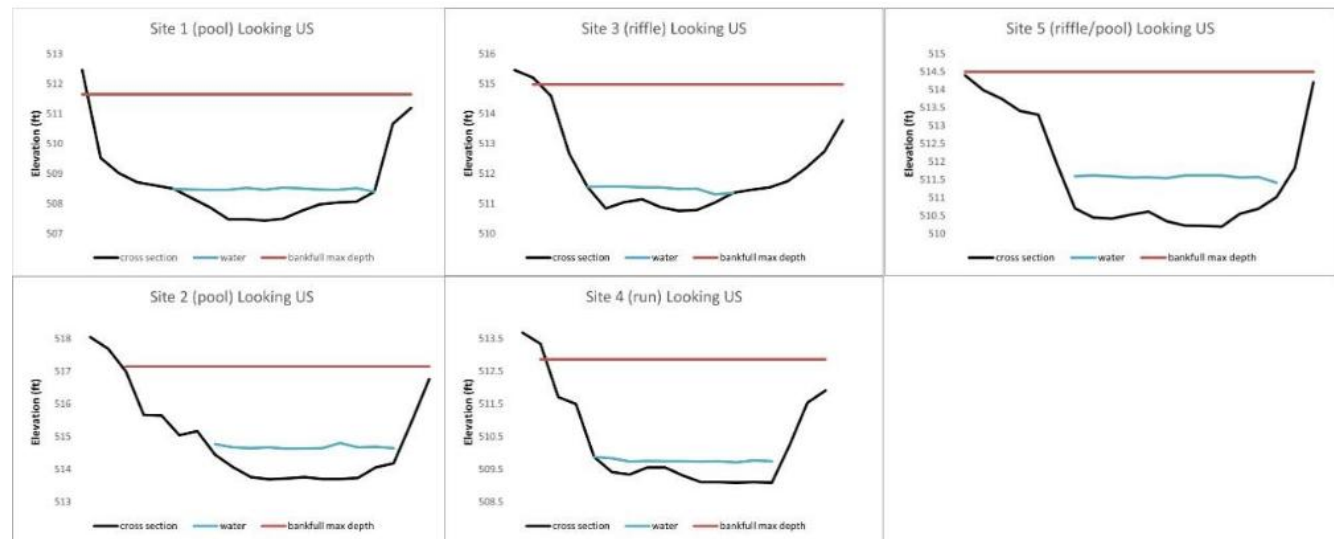
Study Area



Water Quality factors

- Water quality & stream flow taken during each visit:
 - pH, streamflow & dissolved solids concentration found be at acceptable levels
 - dissolved oxygen at low end of optimal levels
- Cross sectional survey conducted of the streambed profile
 - High erosion & sediment deposition evident throughout stream reach
 - Highly channelized banks along entirety of both shorelines

	# of Trips	pH	SPC (uS/cm)	TDS (mg/L)	DO (mg/L)	Flow (GPM)
Average	7	7.3	308.4	200.4	6.7	1,454

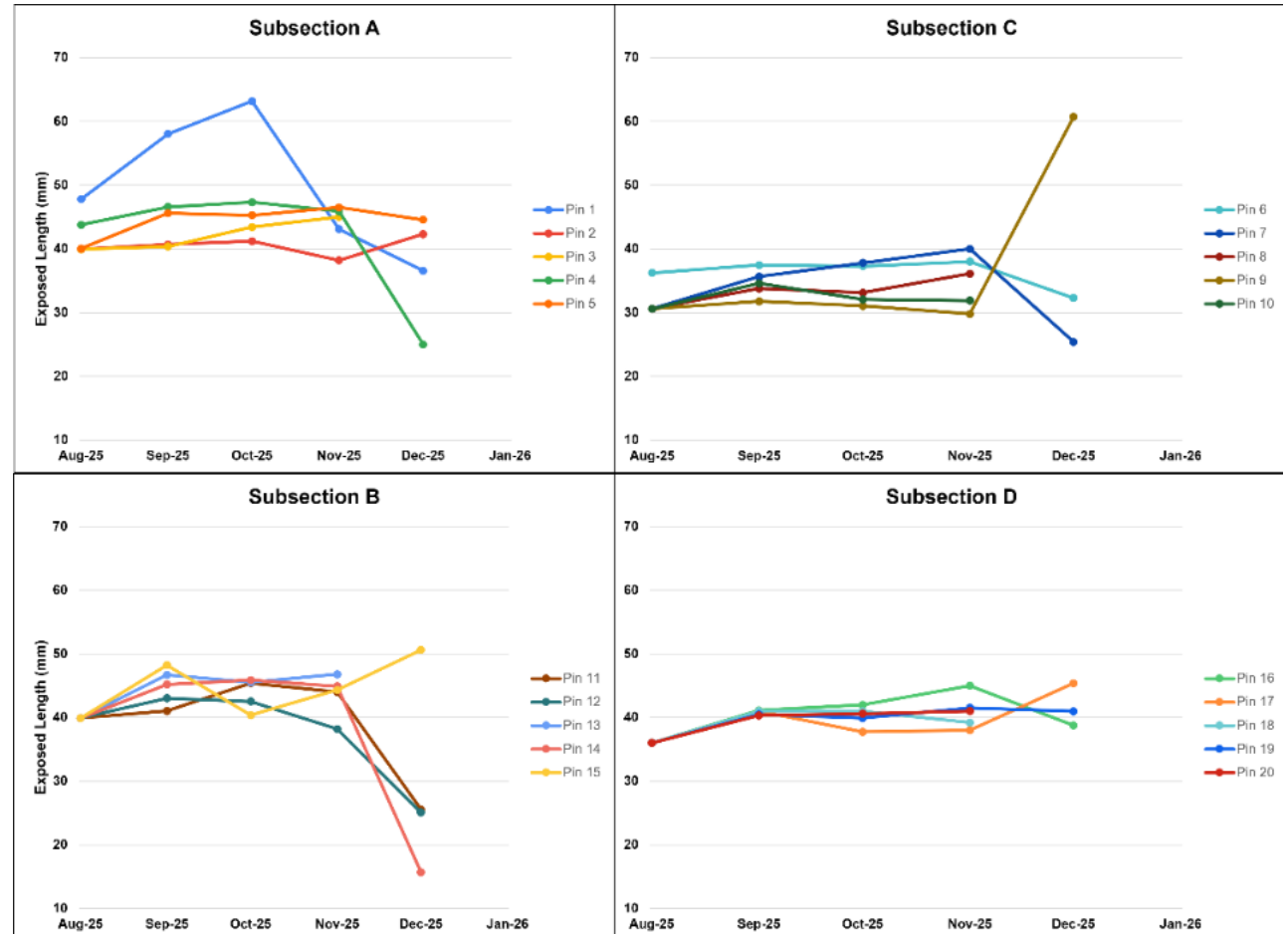


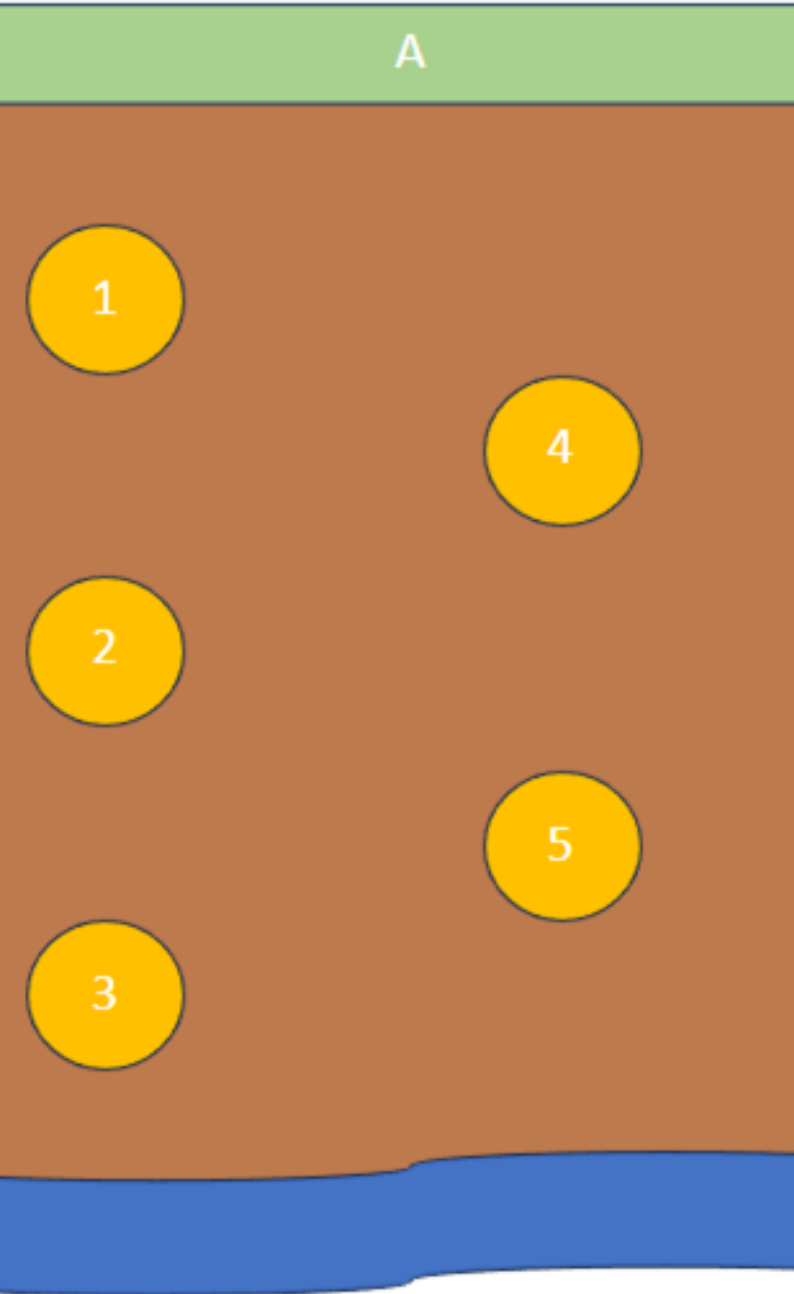
Erosion & Sedimentation



Erosion Pins

- Erosion pins were installed in fall of 2025 and have been monitored monthly
 - all subsections evidence of both erosion and deposition at varying rates.
- Subsections A, B & C have experienced significant deposition
- Stream bank monitoring will continue through the spring as habitat improvement structures are implemented





Benthic Macroinvertebrates

- Initial survey found marginal benthic community I
- Dominated by mid-tolerant groups
- Small proportion of sensitive taxa found, likely due to bottom substrate characteristics



Macroinvertebrates and Current Habitat

- Bottom substrate of stream largely composed of fine sediment mud/sand bottoms
- Submerged Aquatic Vegetation (SAVs) present as second largest habitat type
- Few if any coarse substrate
 - Likely due to high sediment loads/characteristics of stream



Next Steps: Habitat Improvement Structures

- Live Staking
- Toe Wood
- Coir Mats & Logs
- Cobble Introduction





Thank you

Questions?