

# Middle Fork Fish Habitat Improvement: Phase 2

## Final Report



### Prepared by:

Elk County Conservation District (ECCD)

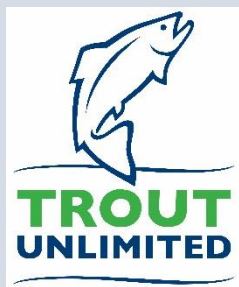
850 Washington St., St. Marys, PA 15857

[mlfever@countyofelkpa.com](mailto:mlfever@countyofelkpa.com)

814-776-4609



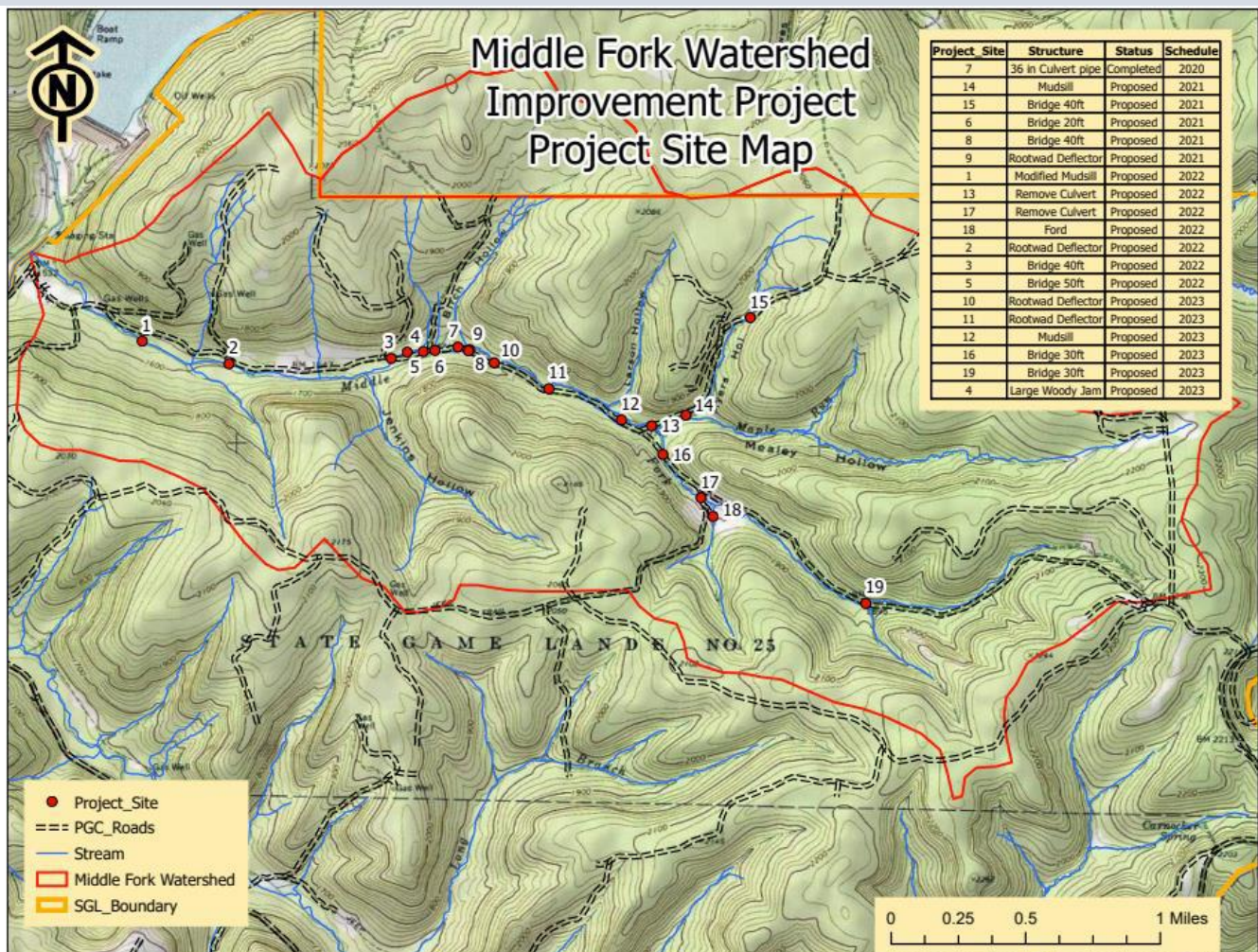
Western Pennsylvania  
Conservancy



### Project Partners:

PA Game Commission

Western Pennsylvania Conservancy



## **Project Background**

Middle Fork East Branch Clarion River (Middle Fork) is a High-Quality Coldwater Fishery in northwestern Pennsylvania. It is located entirely in Jones Township in northern Elk County. At its terminus, Middle Fork joins another High-Quality Coldwater Fishery—the East Branch Clarion River. The Middle Fork watershed provides an ideal location for this effort, as the entire watershed is encompassed by State Game Lands 025 and Elk State Forest, so it is 100% open to the public for angling, and contains naturally reproducing populations of both brook and brown trout.

Phase 2 of the Middle Fork Fish Habitat Improvement Project entailed the installation of structures to alter stream flow direction, improve fish habitat, and protect Middle Fork Road and Briggs Hollow Road from damage or collapse due to closely-adjacent eroding stream banks. The four planned structures were constructed with logs, root wads and boulders lining and embedded in the bank. An additional structure was also able to be installed as part of this effort. These structures direct erosive flow velocities away from the stream bank towards the center of the channel, creating deeper pool habitat. A portion of the structures closest to the stream thalweg are undercut, providing overhead cover. This project also protects approximately 250 feet of stream bank, which comprises the toe of slope of both Middle Fork Road and Briggs Hollow Road, reducing erosion and sedimentation which is detrimental to wild trout reproduction. This project helped to enhance the coldwater resource to support this grant program's goals. This project also accomplished goals and objectives established by the Eastern Brook Trout Joint Venture, Pennsylvania's Wildlife Action Plan, Pennsylvania Game Commission (PGC), and Pennsylvania Fish and Boat Commission (PFBC) Brook Trout Conservation Strategies.

## **Public Meeting Information**

<b>Meeting Type</b>	<b>Date Presented</b>	<b>Number of Attendees</b>	<b>Organizations Represented</b>
Elk County Conservation District Board Meeting	March 28, 2022	10	Elk County Conservation District
Jim Zwald Chapter Trout Unlimited Meeting	April 26, 2022	9	Elk County Conservation District, Western Pennsylvania Conservancy

\*All meetings were held at the Elk County Conservation District Office, 850 Washington Street, St. Marys, PA 15857.



## **Before and After Photos**

Before:





After:



Photo 1. Three mudsills on right side of photo



Photo 2. Mudsill on left side of photo

Photo 3. Mudsill on right side of photo





Photo 4. Mudsills on right side of photo

### **Project Summary**

The Middle Fork Watershed was improved through the installation of fish habitat structures that also serve as erosion prevention structures throughout the summer of 2022. Five mudsills were installed, stabilizing a minimum of 250 feet of streambank. These structures were installed using PGC equipment and staff, as well as WPC staff. Logs, rootwads, and stone were the primary materials for the project. WPC provided technical assistance for the structure installation, PGC provided machinery and labor for the project. This project took place in the Middle Fork Watershed, which is located in Jones Township, Elk County.

### **Project Outcomes**

All project objectives were met and exceeded. The original objectives of the project were to install four proposed habitat structures to stabilize a minimum of 250 feet of stream bank, redirect erosive flows, and improve pool habitat and overhead cover. Five structures were able to be installed, exceeding the original plan of four. The project throughout the entire watershed is not complete. This phase of the project is complete, but there is more aquatic organism passage work to be done in the summer of 2023.

### **Project Sustainability**

This project is expected to need very limited maintenance. The major threat to the sustainability of the project is severe storm events, which could wash out portions of structures or result in debris getting stuck on the structures. If maintenance needs are identified, ECCD will work with project partners to address issues.

In the summer of 2023, more aquatic organism passage projects are planned for the Middle Fork watershed. This is important to ensure the tributaries to Middle Fork are connected to the main branch to prevent population isolation, which results in genetic issues and unhealthy populations of organisms. Along with these aquatic organism passage projects, habitat enhancement/ erosion prevention structures will be installed. The installation of these structures will enhance the benefits of the current project by providing more habitat for the species present in Middle Fork, preventing erosion of the road base, and connecting additional tributaries to the main channel.

### **Project Partners**

<b>Organization</b>	<b>Contribution</b>
Pennsylvania Game Commission	PGC donated \$11,600 worth of materials and labor including a tracked skid steer and operator, logs and root wads.
Western Pennsylvania Conservancy	WPC donated project management and construction labor, project coordination, construction oversight, volunteer recruiting and training, and mileage, making their total contribution \$9,561.

### **Accomplishments and Outputs**

Observed or measured improvements to the overall condition of the stream or watershed: Additional stream habitat has been implemented, which will improve the condition of the stream over time. Due to left over materials, on the last structure, a single log vane was installed, which will dig a scour pool over time contributing to increased habitat.

Number of linear feet improved: Approximately 250 linear feet of stream were improved as the result of this project. There were five structures placed.

Barrier removal: As part of this project as a whole, 10 new tributaries will be reconnected to the main channel of Middle Fork.

## Coldwater Heritage Partnership Final Budget Report

**Organization:**

**Elk County Conservation District**

**Project:**

**Middle Fork Fish Habitat  
Improvement: Phase 2**

**Grant Amount:** \$9,400

**Contract Dates:**

4/13/22-9/30/23

		Estimated Expenses (from original approved budget)			Actual Expenses (input after project is complete)		
Items	Description	CHP Grant Cost	Match		CHP Grant Cost	Match	
			Cash	In-Kind		Cash	In-Kind
<b>Professional Services/Labor</b>	WPC Watershed Conservation Program Staff	\$1,916	\$2,316		\$2,180	\$9,344	
	Volunteers: construction labor			\$1,088			
	ECCD Watershed Technician: Grant Coordination, Construction Assistance, Final Reporting	\$855			\$690		
<b>Travel</b>	WPC Mileage 400 miles	\$116	\$116		\$85	\$217	
	ECCD Mileage 90 miles	\$52			\$13	\$20	
<b>Equipment and Supplies</b>	Supplies: Oil and gas for chainsaw and drill	\$50					
	Equipment: sledgehammer (2)	\$76					
	PNDI fee for permit				\$40		
	Equipment: saw chain	\$30					

	Equipment: drill bit	\$50					
<b>Contractual/ Construction</b>	PGC Tracked Skid Steer and Operator			\$3,000			\$3,000
	PGC Donated Logs			\$1,400			\$1,400
	Stone	\$6,000		\$600	\$6,392		
	PGC Donated Root Wads			\$7,200			\$7,200
	Rebar	\$300		\$100			\$400
<b>Administrative</b>							
<b>Meeting Space /Rental</b>							
<b>Other</b>							
<b>Total</b>		<b>\$9,445</b>	<b>\$2,432</b>	<b>\$13,388</b>	<b>\$9,400</b>	<b>\$9,581</b>	<b>\$12,000</b>