

Coldwater Heritage Partnership Implementation Grant Final Report

Lucky 7 Stream Restoration

- **Public Meeting Information:**
 - Following the grant, a public meeting of the Kettle Creek Watershed Association was held on September 12, 2021. There were 9 in attendance from the following organizations: Kettle Creek Watershed Association (KCWA), Clinton County Conservation District (CCCD), Lucky Seven Hunters' Camp, Kettle Creek/Tamarack Sportsman's Association, and Trout Unlimited (TU).
- **Photos-attached**
- **Project Summary**
 - The Lucky Seven stream restoration project was designed to reduce the sediment loading to Kettle Creek and protect the streambank from further erosion. The site is located along Kettle Creek, an Exceptional Value stream located in northern Clinton County. It sits just a few hundred yards downstream of the Hammersley Fork tributary. The KCWA, TU, and the CCCD worked to install the project during the week of August 8-12, 2022. Fifteen sections of 20-foot modified mudsills were installed end-to-end along a 430-foot section of streambank. The sills were installed by first digging trenches and placing sill logs into the banks to serve as anchors for the structures. After the sill logs were placed and anchored with rebar pins into the streambed, the face logs were fitted, placed, and anchored to the sill logs. The face logs will serve as the hard surface that is needed to prevent further erosion from occurring on the streambank. Finally, the sill log trenches and the area behind the face logs were filled in with R5 limestone boulders to further anchor the structure and create additional hard surface to prevent erosion. The sills were graded to allow easier access to floodplain, and the final seeding and mulching occurred to stabilize the site with vegetation. The downstream end of the structure received additional root balls from large sycamores taken on site during construction. The root balls were anchored in further with large tree trunks and R5 boulders as well. Large R7 boulders were placed in the thalweg of the stream to add habitat for aquatic organisms and to slow the velocity of water in the stream section. In October, a landscaping service will be removing invasive shrubs and replanting the disturbed area with native trees and shrubs. The entire project should not only work to reduce erosion and sediment entering the watershed, but also to provide much needed habitat for fish in a section of Kettle Creek that is over widened and undiversified.
- **Project Outcomes**
 - All project objectives outlined in the CHP grant were or will be met by October 2022. The actual construction and stabilization of the Lucky 7 project was completed during the week of August 8-12. The final step is to complete the riparian planting which will occur in mid-October.
- **Project Sustainability/next steps**
 - The modified mudsills at Lucky Seven were carefully constructed to ensure the best possible long-term outcome for the project. Trout Unlimited Habitat and Restoration Specialists designed the project and were on site for the duration of construction. The modified mudsills are expected to hold with little to no maintenance for years to come,

however, should they dislodge or should damage occur, the KCWA has necessary funding to immediately repair the structures. Threats to the project are flooding and the large ice drifts that accumulate upstream during the winter. Both of these factors could potentially damage the structures under extreme conditions; However, this is unlikely. The site will be routinely monitored throughout the year by both members of the Lucky Seven Hunter's Club and by the KCWA.

- The main stem of Kettle Creek experiences erosion like the Lucky Seven site throughout the watershed. Just downstream of the project, additional work could be done to reduce erosion through a similar style of restoration. This would increase the restored area by over 300 linear feet. The erosion is identical to that of Lucky Seven before the restoration and would be a good project to consider in the future.
- **The organizational partners directly involved in the project are as follows:**
 - Kettle Creek Watershed Association (KCWA), Clinton County Conservation District (CCCD), Lucky Seven Hunters' Camp, Kettle Creek/Tamarack Sportsman's Association, Trout Unlimited (TU), and Native Creations.
 - Grant Funders: Coldwater Heritage Partnership, Foundation for PA Watersheds, and the Department of Conservation and Natural Resources (DCNR)
 - Other organizations indirectly involved through planning: PA Department of Environmental Protection (DEP)
- **Accomplishments and outputs**
 - The eroding vertical banks were corrected and armored with modified moundsills. This section of Kettle Creek will now be able to withstand high water events without losing excess sediment to the stream. Additionally, the banks were graded and stabilized, and will be planted with native trees and shrubs to further stabilize and protect the site. Boulders in the thalweg provide additional in-stream habitat for fish.
 - 430 linear feet of streambank restored, additional habitat for fish and aquatic organisms, streambank graded for easier floodplain access
 - Trees/shrubs will be planted at 260 stems per acre, 1.35 acres = around 350
 - There was one long modified moundill consisting of 15 sections that averaged 20 feet per section. Additionally, there were root ball deflectors added to the downstream end of the project, a wing on the upstream end, and multiple large boulders added to the thalweg of the stream.

Additional Photos can be found at:

https://drive.google.com/drive/folders/1-A-OeqS_bZHBfdzTI7gA-Znp17tlvAqf?usp=sharing



