Snitz Creek 2 - Stream and Floodplain Restoration
Growing Greener Grant Program Contract # C990005066
Sponsor: Doc Fritchey Trout Unlimited

Project Description The Snitz Creek 2 Project is on Elizabeth Run, a first order tributary to Snitz Creek in the Quittapahilla Creek Watershed located in Cornwall Borough, Lebanon County, PA. The reaches along Elizabeth Run were historically straightened to allow maximum use of the farm fields along both sides of the channel. Side castings from the channel excavation created berms along the banks separating the channel from its floodplain. The remnants of an old railroad culvert crossing separated the upper and lower reaches creating a significant constriction that contributed to severe erosion downstream. All stream reaches were laterally and vertically unstable. Increased sedimentation significantly degraded in-stream habitat. This section of Elizabeth Run also received direct runoff from cultivated fields along the right floodplain. The Project was implemented to restore the stream channel and floodplain.

Project Objectives Restore 2,025 linear feet of Elizabeth Run by creating a stable sinuous stream channel with good in-stream habitat that supports diverse macroinvertebrate and fish communities. Restore the floodplain by removing the berms, lowering the streambanks and creating an active floodplain with emergent and scrub-shrub water quality wetland that provide treatment for runoff from adjacent cultivated fields.

Project Results This project restored 2,025 linear feet of Elizabeth Run by creating a stable, gently sinuous stream channel along the upper and lower project reaches. The opening at the old railroad crossing was widened thereby eliminating the constriction. Bank stabilization measures included rock walls, toe benches with soils lifts and boulder outcrops to protect the reconstructed banks and floodprone benches. In-stream structures included constructed riffles, boulder runs and a boulder cascade to provide grade control and create in-stream habitat for fish and macroinvertebrates. Floodplain restoration along the upper reach included removal of the berms and lowering the streambanks to reconnect the channel with an active floodplain and create a 1.02 acre emergent and scrub-shrub water quality wetland along the right floodplain that provides treatment for runoff from the adjacent cultivated fields. A 0.27 acre buffer was established along the edge of the cultivated fields to filter runoff and stabilize the slope at the edge of the water quality wetland, In addition, it has established 1.78 acres of riparian buffer seeded with native grasses and wildflowers and planted with native trees and shrubs along the Project Area.



Pre-Construction



Upper - During Construction



Lower - During Construction

Project Costs Growing Greener Grant - $481,563; LCCD ACAP Grant - $245,385.50; LCCD CAP Grant - $245,385.50 Cornwall Borough - $100,000; Total - $1,072,334

Partners Doc Fritchey Trout Unlimited, Cornwall Borough, Quittapahilla Watershed Association, The Lebanon Valley Conservancy, Lebanon County Conservation District (LCCD), Clear Creeks Consulting and Ecosystem Planning and Restoration Company and Kinsley Construction.

Contact Information Doc Fritchey Trout Unlimited, Russ Collins at russ@dftu.org Cody Rhoads, Cornwall Borough at crhoads@cornwall-pa.com

Upper Reach



Photo 1 – Culvert at Lebanon Valley Rail Trail Pre-Construction



Photo 2 – Culvert at Lebanon Valley Rail Trail During Construction



Photo 3 – Looking upstream at eroding left bank adjacent to cui-de-sac Pre-Construction



Photo 4 – Looking downstream at same bank During Planting
Note – Imbricated rock wall (White) Wetland along right floodplain (Red)



Photos 5 and 6 – Upper Reach Pre-Construction





Photos 7 and 8 – Upper Reach Pre-Construction





Photo 9 – Looking downstream along Upper Reach During Planting
Note - Wetland right floodplain (Red)



Photo 10 – Looking downstream along Upper Reach During Construction
Note – Constructed Floodprone Bench left bank (Green) Wetland right floodplain (Red)



Photo 11 – Looking downstream along Upper Reach During Construction
Note – Constructed Floodprone Bench left bank (Green) Wetland right floodplain (Red)



Photo 12 – Looking downstream along Upper Reach During Planting
Note - Wetland right floodplain (Red)

Middle Reach



Photos 13 and 14 – Middle Reach Pre-Construction





Photos 15 and 16 – Middle Reach Pre-Construction





Photo 17 – Looking downstream along Middle Reach During Planting



Photo 18 –Looking upstream along Middle Reach During Planting



Photo 19 – Looking downstream along Middle Reach Post-Construction



Photo 20 –Looking upstream along Middle Reach Pre-Planting
Note – Wetland along right floodplain (Red) and Excavated Floodprone Area after berms removed (White)

Lower Reach



Photo 21 and 22 – Lower Reach Pre-Construction
Note – Old Railroad Culvert (Red)





Photo 23 and 24 – Lower Reach Pre-Construction





Photo 25 – Looking downstream at Lower Reach Pre-Planting
Note – Old Railroad Culvert (Red) and Excavated Floodprone Area (White)



Photo 26 – Looking upstream along Lower Reach Pre-Planting
Note – Old Railroad Culvert (Red) and Excavated Floodprone Area (White)



Photo 27 – Looking upstream along Lower Reach During Construction
Note – Boulder Outcrops right bank



Photo 28 – Looking upstream along Lower Reach During Construction
Note – Boulder Outcrops left bank (Red) and toe bench with soil lifts right bank (White)



Photo 29 – Looking downstream along Lower Reach During Construction
Note – Boulder Outcrops (Red), Toe Benches with Soil Lifts (Green) and Excavated Floodprone Benches (White)



Photo 30 – Looking upstream along Lower Reach During Construction
Note – Boulder Outcrops (Red) and Toe Bench with Soil Lifts (Green) right bank and Excavated Floodprone Bench (White) left bank



Photo 31 – Looking across Lower Reach During Construction
Note – Boulder Outcrops along right bank



Photo 32 – Looking upstream along Lower Reach from Culvert Road Post-Planting
Note – Excavated Floodprone Benches (White) both sides of channel