

Bear Cabin Branch Stream Restoration

Project Overview 



Site Location:
Forest Hill, Maryland



Client / Owner:
Harford County
Government



Completion Date:
June 2018



Design & Build Cost:
\$1,169,126.73

The Bear Cabin Branch Stream Restoration project was located on property owned by Harford County government, off Grafton Shop Road in Forest Hill, Maryland. The project encompassed approximately 3,675 linear feet of stream restoration, 5.4 acres of wetland creation, and 7.2 acres of wetland enhancement. Funding for this project was provided by the Maryland Department of Natural Resources Chesapeake and Atlantic Coastal Bays Trust Fund.

Prior to construction the reach, classified as a Use-IV stream, exhibited high to extremely high bank erodibility, with very little rooting depth or density, bank angles greater than 70 degrees, and barren banks devoid of any effective surface protection. The channel had become incised, leading to shear stress along the near bank region during high flow events. The stream also had a large amount of legacy sediment present within its corridor, likely from past agriculture and urbanization within the watershed.

The restoration focused on removing legacy sediment and reestablishing a connection to the floodplain. Large oxbow wetlands were established in the floodplain to further help dissipate energy during out of bank events. Rough grading within the floodplain was established to create areas of microtopography to increase habitat and slow velocities during high flows.

Immediately after construction, the site began to establish vegetation rapidly, which has assisted in providing stability as the restoration becomes settled. The site has fared well after many large storms following construction. The site has already proved to provide habit for a variety of aquatic animals and birds. This project resulted in nutrient reductions of 216.75 lbs N/year, 31.96 lbs P/year, and 10.5 tons TSS/year.

Project Highlights:

- Vegetation quickly established after construction to provide stability while the restoration settled.
- Rough floodplain grading has created microtopography pockets for increased habitat diversity and roughness to slow velocities during out of bank events.



Bear Cabin Branch exhibited steep vertical banks exceeding 5 feet throughout portions of the reach, minimizing floodplain connection and increase near bank stresses.



Bear Cabin Branch had large amounts of legacy sediment present on site, prior to construction.



After construction high velocities were reduced as a result of reestablishing floodplain connection, the creation of oxbow wetlands, and microtopography grading with the floodplain.