
U. S. ARMY CORPS OF ENGINEERS

Fort Detrick Stream Restoration

Fort Detrick, Frederick, Maryland



Stream post-construction.

*Floodplain and stream function
is restored to a degraded
tributary located on an active
U.S. Army installation.*

SERVICES

Assess
Engineer
Design & Build

Fort Detrick is an active U.S. Army installation encompassing more than 1,200 acres in western Maryland. Flowing through the property is an unnamed tributary to Carroll Creek, a Use Class III trout stream. Over the past decades, stormwater flowing from surrounding development had degraded the tributary's stability and ecological function.

As a key member of a design-build team led by Gale Construction, Biohabitats helped the U.S. Army Corps of Engineers create and implement a restoration project to improve the tributary's natural hydrology, stability, water quality, pollution, and wildlife habitat. Biohabitats designed a new alignment for the stream transforming the tributary into a large, stable, functioning, two-stage stream channel and floodplain. The design also protected several silver maples (*Acer saccharinum*) that were adjacent to the original alignment.

Several design features reduce the project's material and environmental costs. Any trees that had to be removed were used in the construction of bank stabilization and habitat creation. Riffle material harvested from the original channel was repurposed to construct new riffles to seed the macroinvertebrate community. The riffle run sequences were based on an upstream reference reach, where long riffles incorporate deeper pockets of water to allow easy fish passage and habitat for both fish and macroinvertebrates. The previous channel alignment was left as an offline oxbow wetland, which provides habitat while holding and filtering stormwater.