

STICKNEY CREEK RESTORATION

The plantings along Stickney Creek and adjacent floodplain in Brooklyn's Veterans Memorial Park have been growing in nicely since the project's completion in 2021. The natural and wildlife enhanced landscape design is the work of Biohabitats, an environmental consulting firm based in Cleveland. Thanks to West Creek Conservancy for assisting Big Creek Connects and the City of Brooklyn with management of the project grants. Still to be developed is the trail system that includes a second bridge across Stickney Creek, creating a pedestrian loop.

See interpretive signage on the next page to learn about methods and features that apply to this project and stream restoration projects in general. In our next newsletter, we plan to report on more of these efforts underway within the Big Creek watershed. To learn more about the Stickney Creek project's specific development process and funding details, see our December 2021 newsletter.

Using nature to restore nature.

Long ago, Stickney Creek wound gently through this area, shaded by the native grasses, shrubs, and trees that formed its surrounding floodplain. A stream's floodplain provides wildlife habitat and absorbs flood waters during heavy rains. Together, the creek and its floodplain functioned as an ecosystem.

As Brooklyn became more developed and paved, the amount and speed of stormwater flowing into the park increased and the banks of Stickney Creek started to erode. The City of Brooklyn installed "gabion baskets," wire cages filled with rock, to fortify its banks. Although the baskets provided some short-term protection, they separated the creek from its natural floodplain, and they eventually failed. Some even collapsed into the stream, along with portions of a walking trail.

Rather than replacing the gabion baskets, the city turned to a more resilient solution: ecological restoration. Using natural materials generated by the removal of the gabion baskets and the grading of the floodplain here in Veterans Park, the city applied three nature-based techniques to stabilize the creek and reconnect it to its floodplain: Toe Wood, Soil Lifts, and Buried Soil Rip-Rap.

A restored Stickney Creek ecosystem means increased habitat, safety, biodiversity, and natural beauty for us to enjoy in Veterans Park!



BEFORE AND AFTER RESTORATION OF STICKNEY CREEK



Before and After - Eroded Trail Section

Before and After - Concrete Ford

Before and After - Immediately Upstream of Bridge

WHAT DO YOU REPLACE GABION BASKETS WITH?

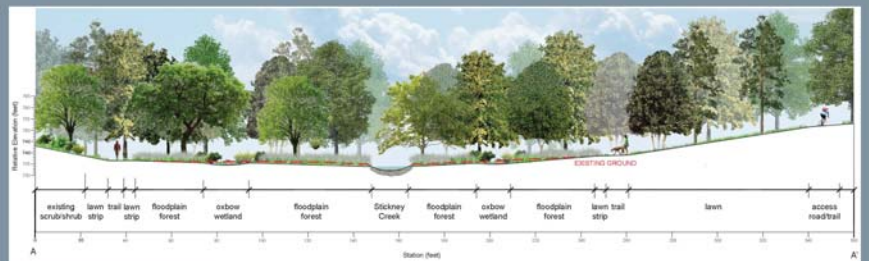
Restoring Stickney Creek required some very special design and construction techniques:



Toe Wood

Soil Lifts

Buried Soil Rip-Rap



Concept Cross-section

Stickney Creek restoration interpretive signage.
Story on first page.

Can You Spot These Park Visitors and Residents?

This part of Stickney Creek was once lined with "gabion baskets," metal cages filled with rocks. Intended to protect the creek from erosion, the baskets offered little habitat and ultimately did not hold up. Many of the baskets collapsed into the creek, bringing with them excess debris and sediment. The baskets are now gone, and the creek has been restored naturally, with materials like wood, soil, and live plants. Stickney Creek and its surrounding floodplain now provide habitat for native fish, birds, amphibians, and other wildlife. Can you spot any of these critters?

RIFFLES AND POOLS

Riffles (rocks and pebbles across the stream) provide habitat for fish like dace and darters, which like fast-moving water, and the tiny spineless animals (macroinvertebrates) they eat. Pools provide protection and shelter for species like sunfish and the common shiner, which prefer still water.

RIPARIAN AND FLOODPLAIN FOREST

Riparian forests are like wildlife "highways" that help animals travel from one patch of woods to another along the stream corridors. Floodplain forests are wooded areas beyond the edge of a stream or river that help absorb water that overflows stream banks during heavy storms. In and out of the water, wildlife such as birds and amphibians, depend on the trees and shrubs that grow along and beyond the banks of Stickney Creek for food and shelter.

OXBOW WETLANDS AND VERNAL POOLS

Oxbow wetlands are u-shaped meanders of a river or stream. They look very peaceful, but they are hard at work absorbing flood waters, filtering out excess nutrients from the water, and providing habitat for birds, fish, and other wildlife. Vernal pools are temporary wetlands. Depressions in the land that fill with water seasonally, vernal pools provide key breeding habitat for many forms of wildlife, including frogs, toads, and salamanders.

MEADOWS

Together, the native grasses, sedges, and flowering plants assembled here comprise a meadow ecosystem. Meadows provide important wildlife habitat. The meadow's wildflowers are a great source of nectar for pollinators, like birds and butterflies. The meadow also provides feeding and nesting areas for birds and shelter for small mammals.

RIFFLES AND POOLS WILDLIFE



White Sucker

Blacknose Dace

Creek Chub

Mallard Duck

RIPARIAN AND FLOODPLAIN FOREST WILDLIFE



Salamanders

Wood Frog

Yellow Warbler

Mink

OXBOW WETLANDS AND VERNAL POOLS WILDLIFE



Viceroy

Northern Leopard Frog

Least Skipper

Red-winged Blackbird

MEADOW WILDLIFE



Black Swallowtail

Eastern Tiger Swallowtail

Honey Bee

Ruby-throated Hummingbird



STICKNEY CREEK RESTORATION

Stickney Creek's eroding streambanks and adjacent trail in Brooklyn's Veterans Memorial Park has been restored with the creation of a vegetated floodplain, improved habitat, and new recreational trails. The project is the result of several years of watershed planning and advocacy by Big Creek Connects for the stream restoration with the support of the City of Brooklyn. BCC asked West Creek Conservancy to assist with property easements, grant administration and project management.

Project consultant Biohabitats was chosen for the landscape design. A \$300,000 grant was awarded from the Ohio EPA with a \$461,000 match from the Northeast Ohio Regional Sewer District for the stream restoration. Additional funding was acquired by the city through an ODNR Recreational Trails Program grant to enhance neighborhood connections to the park in 2022 and complete a trail loop with a new footbridge across the creek. The restoration was also catalyst to a \$1.2 million Clean Ohio grant to WCC that leveraged local funds for a total of \$2.1 million to protect 65 acres in Brooklyn and Parma that includes 2.5 miles of stream channel and 10 acres of wetland. The public is encouraged to visit Memorial Park to enjoy the naturalization and scenic beauty of the restored creek.

See photo on next page.

Below, Brooklyn students assist with plantings for the Stickney Creek Restoration Project in June 2021 (see previous page)

