Impact Project Report

Master Naturalists contribute to stream restoration in Duke Forest

Issue

Human activities cause fragmentation of stream systems in several ways, including blocking the movements of aquatic organisms. The Duke Forest Teaching and Research Laboratory is currently in the midst of a stream restoration project on the New Hope Creek with the goal of restoring habitat connectivity, improving habitat, and stabilizing stream banks. A major part of the project is the replacement of 2 human-made structures, the Concrete Bridge (CB) constructed in the 1930s and the Billy Erwin Dam, constructed for a hydroelectric project that was never completed. Duke Forest intends to demolish and replace the Concrete Bridge with a clear-span structure and remove the Billy Erwin Dam, with the goal of restoring stream connectivity and thereby improving the ecosystem.

Project

Macroinvertebrates, a diverse group consisting of mostly arthropods, annelids, and mollusks, are useful indicators of stream health. They are sensitive to different conditions, cannot escape, and are easy to collect and identify. Master Naturalist students Gail Boyarsky and Scotty Knight are sampling the stream macroinvertebrates both pre- and post-removal to provide data to help evaluate the Creek Restoration Project. Along with members of the Duke Forest and Master Naturalist graduate Danielle Kittridge, they sampled the macroinvertebrates at 3 locations above and below the CB and below the Billy Erwin Dam.

This is a long-term project. The Duke Forest plans to monitor the impact of the restoration project for 7 years post-completion, and they intend to continue to monitor the macroinvertebrates at these sites past the 2025 training year.



Scotty Knight and Gail Boyarsky collecting samples. Photo: Danielle Kittredge

Students

This project is the work of Gail Boyarsky, Scotty Knight, and Danielle Kittredge (MN class of 2024).

Impact Projects

Beyond classwork, a key feature of the Master Naturalist Volunteer program is the Impact Projects students develop. These projects integrate course concepts and benefit a Partner Organization.

Highlights

Partner Organization

Duke Forest Teaching and Research Lab

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