

# Delaware Nature Society

ABBOTT'S MILL NATURE CENTER | ASHLAND NATURE CENTER | BUENA VISTA | COOCH-DAYETT MILLS | COVERDALE FARM PRESERVE | DUPONT ENVIRONMENTAL EDUCATION CENTER



## Streamside Habitat Assessment

During rain storms forests, wetlands and meadows function like giant sponges soaking and infiltrating water slowly into the ground. When these areas are developed, water can't soak through roads, parking lots, or building and instead quickly runs into our streams. This results in flooding, pollution, and destruction of the stream habitat.

Volunteers have helped monitor these physical stream changes through a Riparian (streamside) Habitat Assessment. These habitat assessments can help determine if a site is capable of supporting a healthy diversity of aquatic life.

### Macroinvertebrate Survey

The Riparian Habitat Assessment was supplemented with a quick macroinvertebrate survey. Commonly found macroinvertebrates include aquatic insects, clams, mussels, snails, worms, amphipods, and crayfish.

Healthy Delaware streams contain a wide variety of macroinvertebrates, each with its own unique requirements for survival. Pollution sensitive organisms require high levels of oxygen and are sensitive to toxic substances and habitat degradation. Organisms that can withstand very low oxygen levels, high toxicity and/or poor habitat are known as pollution-tolerant species.

Differences in macroinvertebrate pollution sensitivity can be used to assess water quality. Pollution sensitive macro's include: Ephemeroptera (Mayflies), Plecoptera (Stoneflies), and Trichoptera (Caddisflies). However, families within each of these Orders can vary widely in tolerance. The caddisfly family Hydropsychidae, for example, is relatively pollution tolerant. Therefore, identification to family level, or lower, provides a more accurate determination of stream health but is more resource intensive.

The Riparian Habitat Assessment study used a rapid screening approach to characterize the



*Steep eroding stream banks are commonly a sign of excess water running into streams during storms.*

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macroinvertebrate community which, combined with the visual observations, provides a more comprehensive picture of the stream health and helps to determine sites in need of more in-depth study.

16 Technical Monitoring sites were chosen for the initial project, four in each of the sub-watersheds. The data collected and the rating each assessed Technical Monitoring site received can be accessed by clicking the appropriate links, below:

## **Brandywine Creek Watershed:**

- BC3 - [Husbands Run](#)
- BC4 - [Wilson Run](#)
- BC5 - [Rocky Run](#)
- BC6 - [Beaver Run](#)

## **Christina River Watershed:**

- CR5 - [Muddy Run](#)
- CR6 - [Belltown Run](#)
- CR7 - [Cooch's Bridge](#)
- CR8 - [Rittenhouse Park](#)

## **Red Clay Creek Watershed:**

- RCC1 - [Burrows Run @ State Line](#)
- RCC2 - [Burrows Run @ Old Kennett Pike](#)
- RCC6 - [Stanton \(Kiamensi Road\)](#)
- RCC7 - [Hyde Run](#)

## **White Clay Creek Watershed:**

- WCC2 - [Pike Creek](#)
- WCC8 - [Middle Run @ Smith Mill Rd.](#)
- P2 - [Pike Creek @ Beech Hill entrance](#)
- P3 - [Pike Creek @ 3 Little Bakers restoration area](#)

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## Explanation of Data Used in Project

<u>ABBREV.</u>	<u>PARAMETER</u>
CM	Channel Modification
BSC	Bottom Substrate/Cover
E	Embeddedness
RQ	Riffle
FR	Frequency of Riffle
SD	Sediment Deposition
VD	Velocity Depth
BSL	Bank Stability (Left)
BSR	Bank Stability (Right)
BVL	Bank Vegetative Type (Left)
BVR	Bank Vegetative Type (Right)
S	Shading
RZL	Riparian Zone Width (Left)
RZR	Riparian Zone Width (Right)
HCI %	Total of Above Scores/175 x

<u>CLASS DEFINITIONS</u>	<u>HCI %</u>
SD (Severely Degraded)	0 - 59%
MD (Moderately Degraded)	60 - 89%
GC (Good Condition)	90 - 99%
E (Excellent Condition)	≥ 100%