# *Maryland's Volunteer Water Monitoring Programs*

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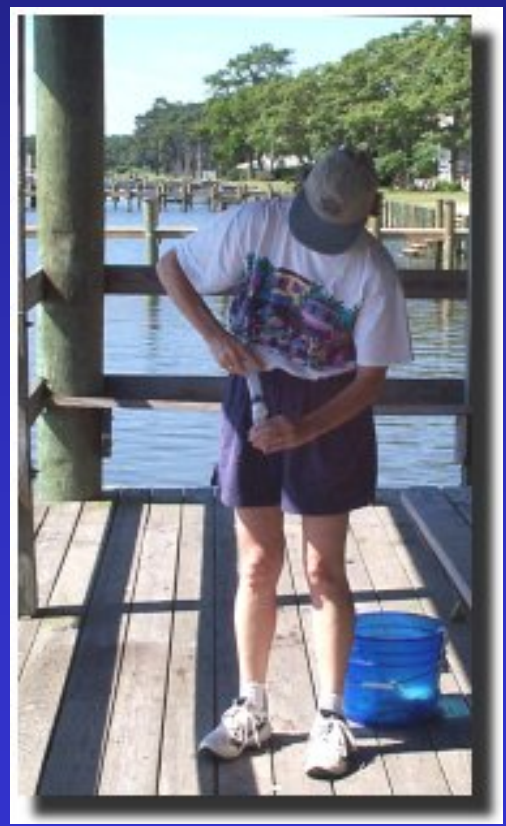
Maryland Department of Natural Resources

# Services for Volunteer Monitors

- Training
- Technical Assistance
- Facilitating Partnerships

- Volunteer monitoring organizations
  - Audubon Naturalist Society
  - Maryland Coastal Bays Program
  - Chesapeake Bay Foundation
  - IWLA Chapters
  - Many watershed organizations



- Colleges, K-12 schools & Scouts
  - Hood College/Monocacy River Project
  - Arlington Echo Outdoor Center
  - Washington College
  - St. Mary's College
  - Many more schools and scout troops

- Local government sponsored
  - Prince George's County Stream Teams
  - Baltimore City pond monitoring
  - Howard County Stream Teams
  - Carroll County stream monitoring
  - Anne Arundel Co./Jug Bay Wetlands Sanctuary
  - Montgomery County Stream Teams

- State sponsored
  - Stream Corridor Assessment (MCC)
  - TEAM DNR
  - Maryland Environmental Trust
  - Maryland Coastal Bays Program (now independent)
  - Maryland Stream Waders

# Stream Waders

# Program Overview

## Goals

- *Fill data gaps*
- *Foster collaboration*
- *Educate*
- *Promote stewardship*

## Maryland Biological Stream Survey (MBSS)

- 5-year rotation of watersheds
- Probability-based sampling design
- 1st – 4th order streams
- Fish, benthic macroinvertebrates, water chemistry & habitat
- ID to genus level

## Stream Waders Program

- MBSS & selected watersheds
- Requested & volunteer selected sites
- Wadeable non-tidal streams
- Benthic macroinvertebrates
- ID to family level

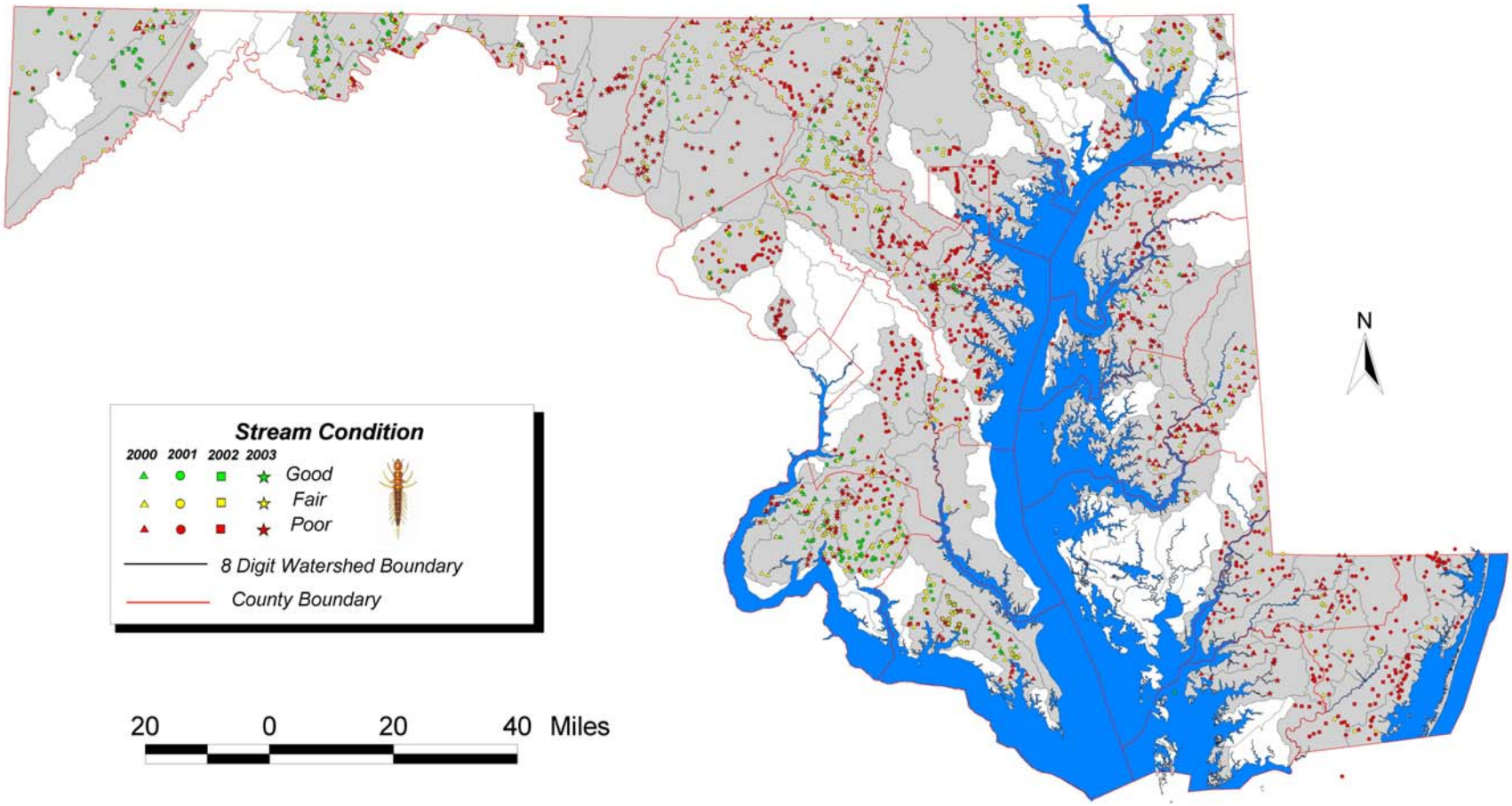
# Field & Lab Methods

- D-net collections
- 20 sq. ft. of the “best available habitat”
- Samples preserved and retained
- Grids selected at random and completely picked
- 100 specimen sub-sample
- Sub-sample identified to family

# Benthic Macroinvertebrate IBI Metrics

- Number of Families
- Number of Mayfly, Stonefly and Caddisfly Families
- Number of Mayfly Families
- Number of True Fly Families
- Percent Mayflies
- Number of Intolerant Families
- Beck's Biotic Index

# 2000 - 2003 Maryland Stream Waders
## Stream Health Ratings




*Monitoring and Non-Tidal Assessment Division*
*Phone: (877) 620-8DNR (x8623)*
*Web: www.dnr.state.md.us/streams/mbss/mbss_volun.html*

# Maryland Stream Waders data

Maryland Department of Natural Resources

Maryland Biological Stream Survey

Stream Waders Volunteer

[Search Tips](#)

**Thank you** to all of the Volunteers who helped collect information from over 1,900 stream monitoring locations since 2000!

[Your Feedback](#)

## Search by:

County: Allegany

Stream name: sideling hill (tip: avoid using terms like "creek" or "branch")

Your last name: (This information is kept confidential and is **not** available online.)

Nearest road crossing:

Site (or watershed) number:

8 Digit watershed name:

Search

More information about Maryland Stream Waders can be found ***here***

# Stream Waders
## Search Results

Maryland Department of Natural Resources

Maryland Biological Stream Survey

Stream Waders
STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
Volunteer

Search Tips | New Search | About Streamwaders | Your Feedback

| Site Name | Stream Name | County | Nearest Road Crossing |
|---|---|---|---|
| 148-2-2000 | Sideling Hill Cr | Allegany | Ziegler Road |
| 148-3-2000 | Sideling Hill Cr | Allegany | Stottlemeyer and Swain Hollow Roads |
| 152-1-2000 | Sideling Hill Cr | Allegany/Washington | High Germany Road bridge |
| 152-2-2000 | Sideling Hill Cr | Allegany/Washington | I-68 |
| 148-1-2001 | Sideling Hill Cr | Allegany | Riser Rd. |
| 148-2-2001 | Sideling Hill Cr UT | Allegany | Riser Rd. |
| 148-4-2001 | Sideling Hill Cr | Allegany | Zeigler Rd. |
| 149-1-2001 | Sideling Hill Cr | Allegany/Washington | Rt. 40 |
| 149-3-2001 | Sideling Hill Cr | Allegany/Washington | Whitfield Swain Rd. |
| 149-4-2001 | Sideling Hill Cr | Allegany | Riser Rd. |
| 149-5-2001 | Sideling Hill Cr UT | Allegany | Swain Hollow Rd. |
| 150-1-2001 | Sideling Hill Cr UT | Allegany | Scenic Rt. 40 and Orleans Rd. |
| 150-2-2001 | Sideling Hill Cr UT | Allegany | Scenic 40 and Orleans Rd. |
| 150-3-2001 | Sideling Hill Cr UT | Allegany | Scenic Rt. 40 and Mann Rd. |
| 150-4-2001 | Sideling Hill Cr UT | Allegany | Watson Rd./Turkey Farm Rd./Mann Rd. |
| 150-5-2001 | Sideling Hill Cr UT | Allegany | Divide Rd and Scenic Rt. 40 along I 68 |
| 152-1-2001 | Sideling Hill Cr UT | Allegany | High Germany Rd. and Earth Rd. |
| 152-2-2001 | Sideling Hill Cr UT | Allegany | Swain Rd. and Scenic Rt. 40 |
| 152-3-2001 | Sideling Hill Cr UT | Allegany | Jenny Rd. and Mann Rd. |
| 152-4-2001 | Sideling Hill Cr | Allegany | High Germany Rd. and I-68 |

Maryland Stream Waders Data

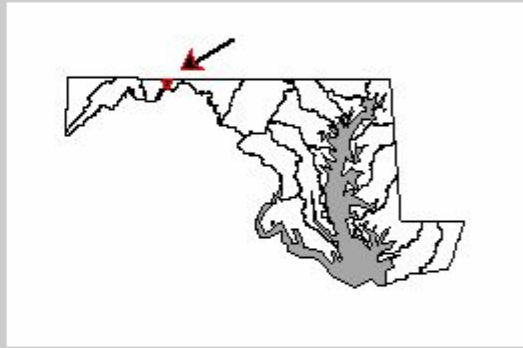
Maryland Department of Natural Resources

Maryland Biological Stream Survey

Stream Waders Volunteer



**Sideling Hill Cr near Ziegler Road in Allegany County**



Site: **148-2-2000**
Watershed: **Sideling Hill Creek**

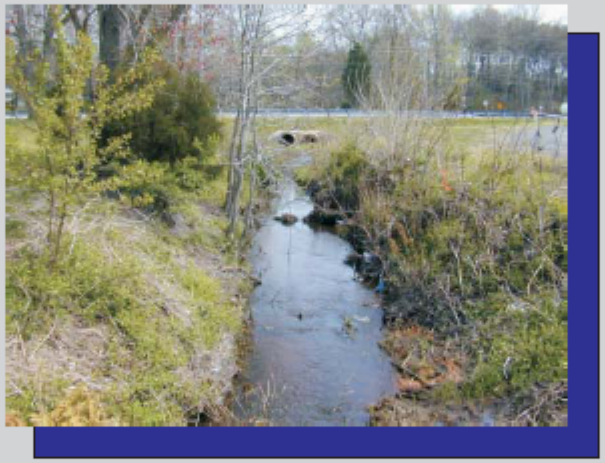
**The Family Level Benthic Index of Biotic Integrity (IBI) Rating is:** Fair

What does the IBI score mean?

The IBI score is a quantitative rating of the health of the macroinvertebrate assemblage found at each site. 18.0 different families of benthic macroinvertebrates were collected at this site. Higher diversity of benthic macroinvertebrates is often associated with better stream quality. Of the different kinds of benthic macroinvertebrates, biologists often refer to three groups in particular as "EPT" (Ephemeroptera, Plecoptera, & Trichoptera). An intermediate number of 9.0 EPT taxa were observed in the macroinvertebrate sample. In addition to the EPT score, Ephemeropteran taxa made up 50.0% of the bugs in the sample. This indicates very good stream conditions. An intermediate number of 3.0 Dipterans (true flies) were found at this site. The combination of these factors (in a mathematical index) result in an characterization of the benthic macroinvertebrate community at this site as Fair.

| Site | Family | Percent of sample |
|---|---|---|
| 148-2-2000 | Heptageniidae, (flathead mayfly) | 27.9 |
| 148-2-2000 | Tanytarsini, (midge) | 13.2 |
| 148-2-2000 | Chironomini, (midge) | 13.2 |
| 148-2-2000 | Ephemerellidae, (spiny crawler mayfly) | 10.3 |
| 148-2-2000 | Baetidae, (small minnow mayfly) | 7.4 |

# MARYLAND STREAM WADERS SAMPLE YEAR 2003 REPORT



CHESAPEAKE BAY AND WATERSHED PROGRAMS
MONITORING AND NON-TIDAL ASSESSMENT
CBWP-MANTA- EA-04-2

# 2000 - 2004
# Stream Waders
# …a real success!

- 700 trainees
- Nearly 3,000 samples
- 75 % of all subwatersheds sampled

# Partners

# Things we're doing right!

- Filling gaps in data
- Collaboration with watershed groups, colleges, high school educators and local governments
- Statewide outreach

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- Still more collaboration
- Additional assessment data
- Improve follow-up with volunteers
- Increase data use

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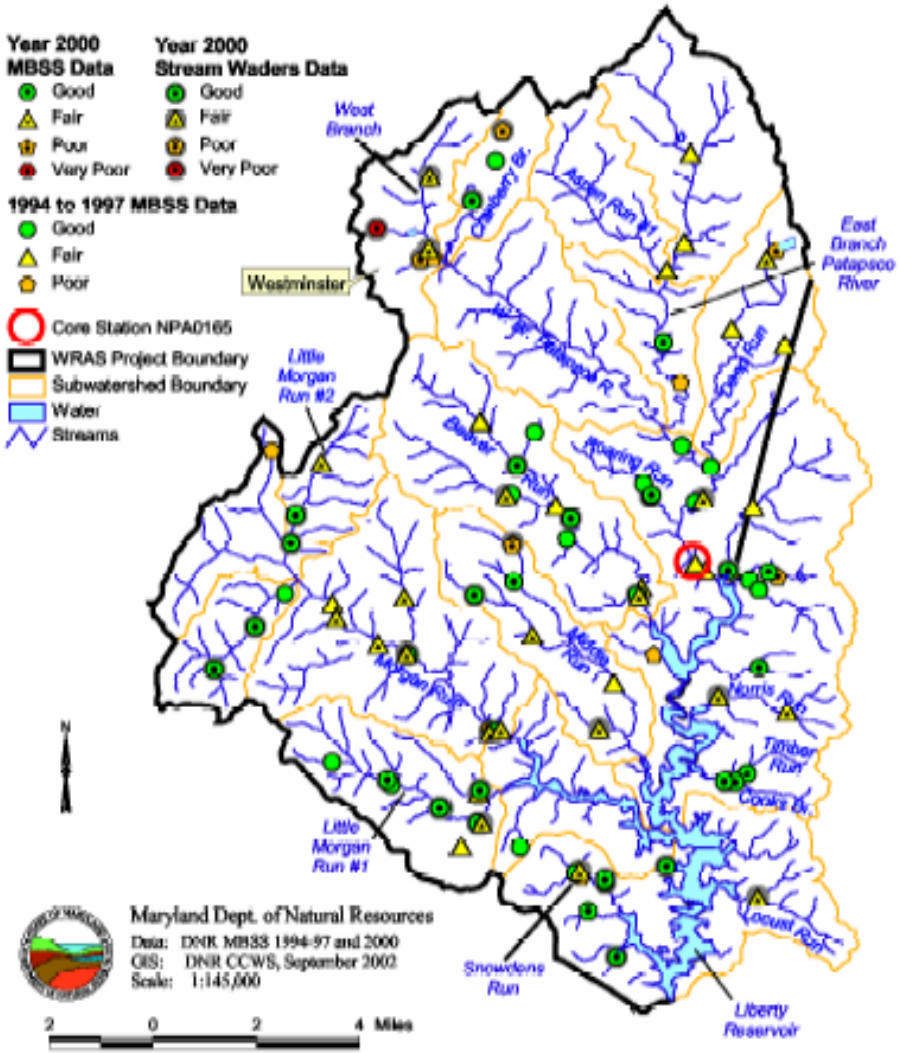
# Volunteer Data Uses

- Watershed Restoration Action Strategies (WRAS)
- Wetland restoration prioritization
- Watershed assessments, restoration, and management plans

# Map 18 Benthic Index
# Liberty Reservoir Watershed



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For more information:
www.dnr.maryland.gov