Maryland Stream Waders – 11 Years of Success!

Dan Boward and Sara Weglein
Maryland Department of Natural Resources
Annapolis, Maryland

Eighth National Monitoring Conference
May 3, 2012

What is Stream Waders?

- **Benthic macroinvertebrates**

- **Part of DNR's Maryland Biological Stream Survey (MBSS)**
- **A way to interact with others interested in streams**
- **A place to meet your future spouse!**

Maryland Stream Waders – 11 Years of Success!

Goals

- **More sampling sites**
- **Provide good data**
- **Educate**
- **Encourage local action**

Maryland Stream Waders – 11 Years of Success!

Benthic Index of Biotic Integrity

POOR – 1.0-2.9

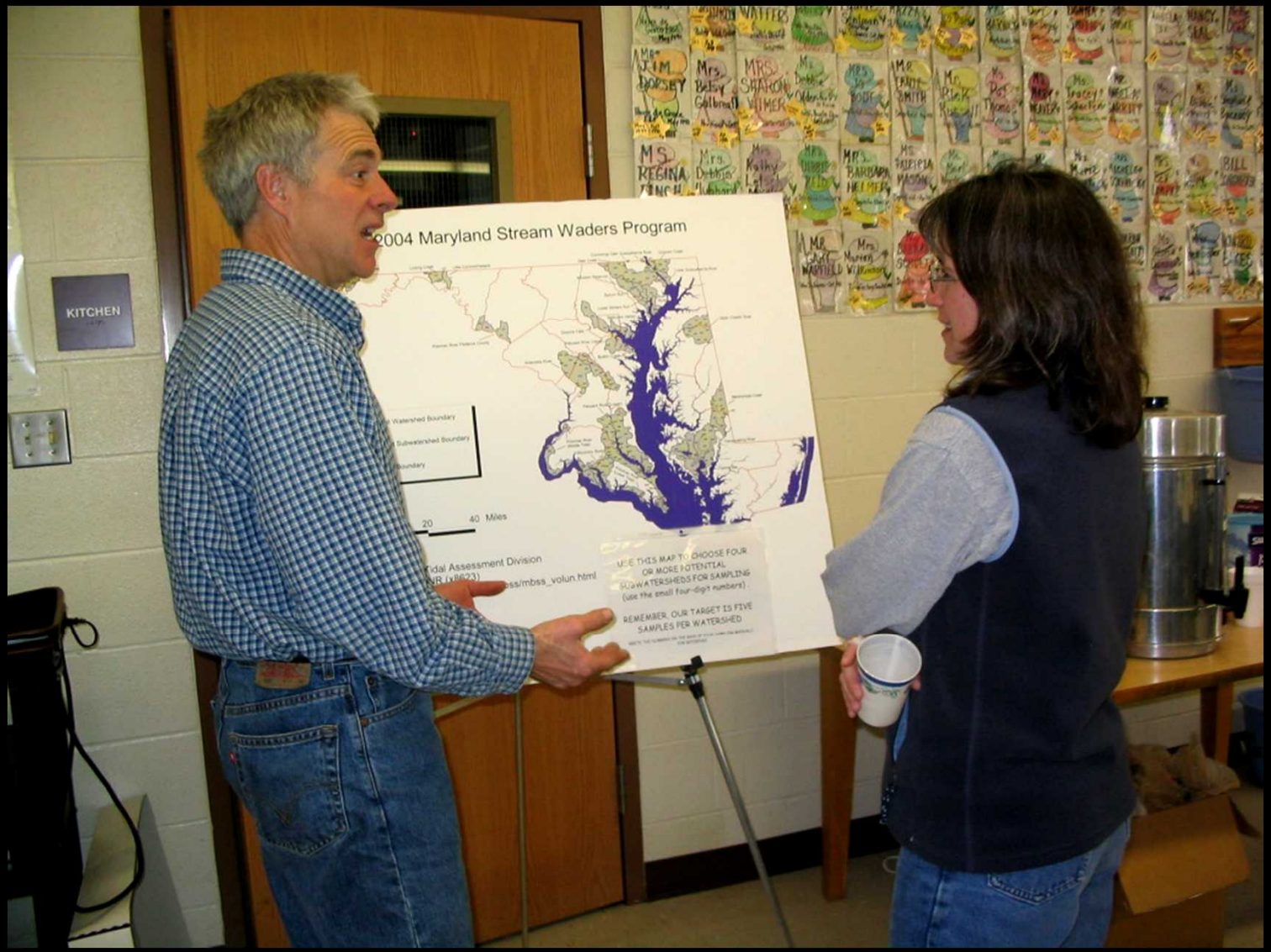
FAIR – 3.0-3.9

GOOD – 4.0-5.0

Maryland Stream Waders – 11 Years of Success!

Maryland Stream Waders – 11 Years of Success!

Maryland Stream Waders – 11 Years of Success!

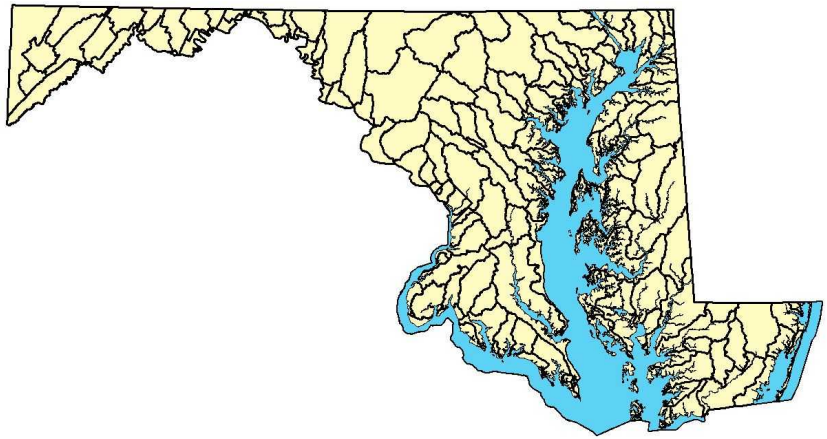


Maryland Stream Waders – 11 Years of Success!

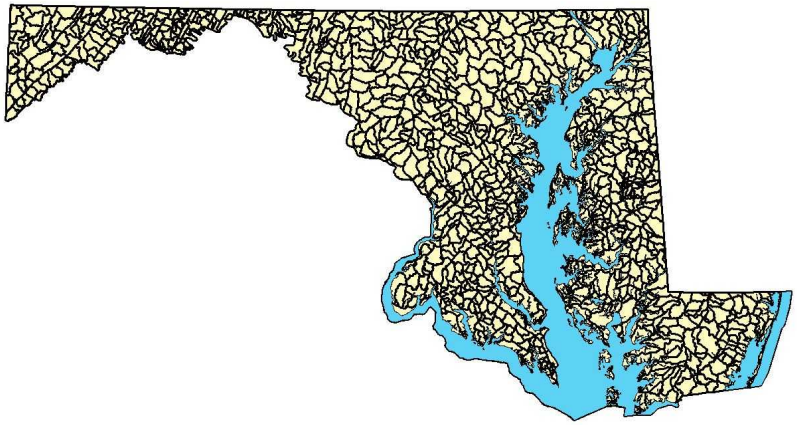
2000 – 2010

- **1,237 trainees (150/year avg.)**
- **40 teams/year**
- **79% of all subwatersheds sampled**
- **5,950 sites (541/year avg.)**
- **673,513 invertebrates identified**

Scale



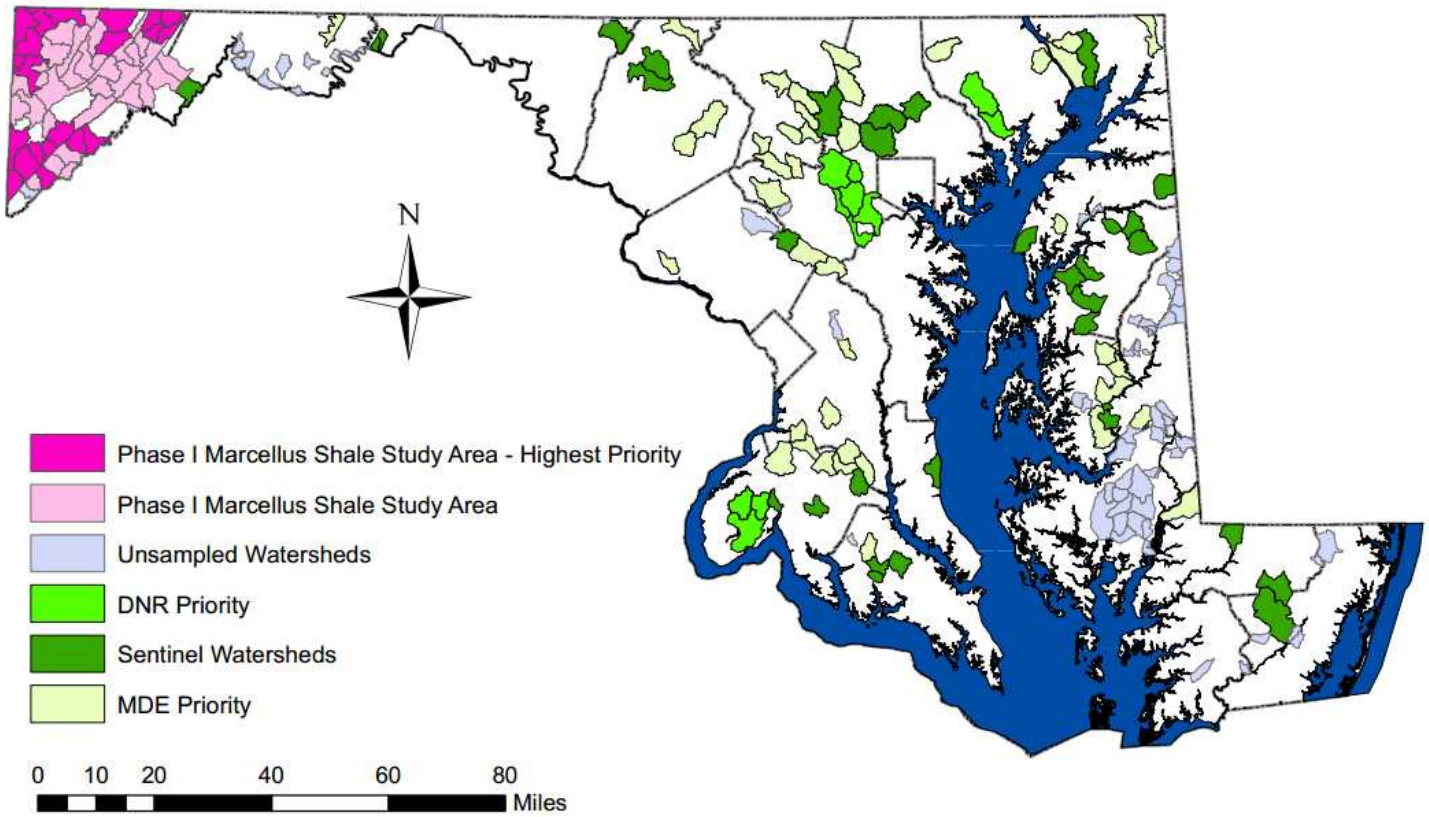
MBSS - Watersheds



Stream Waders - Subwatersheds

Maryland Stream Waders – 11 Years of Success!

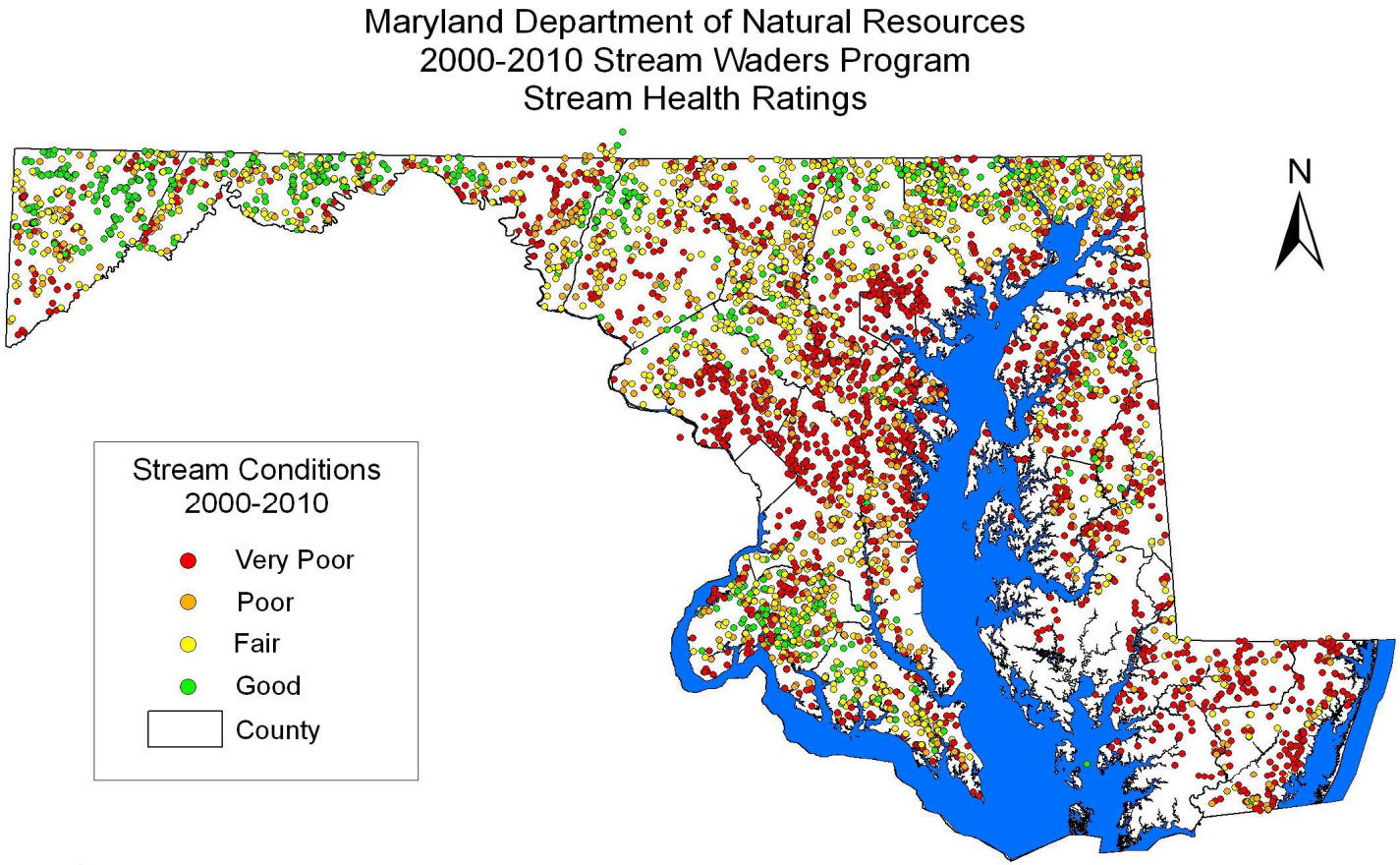
2012 Maryland Stream Waders Watersheds



MARYLAND DEPARTMENT OF NATURAL RESOURCES

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

Maryland Stream Waders – 11 Years of Success!

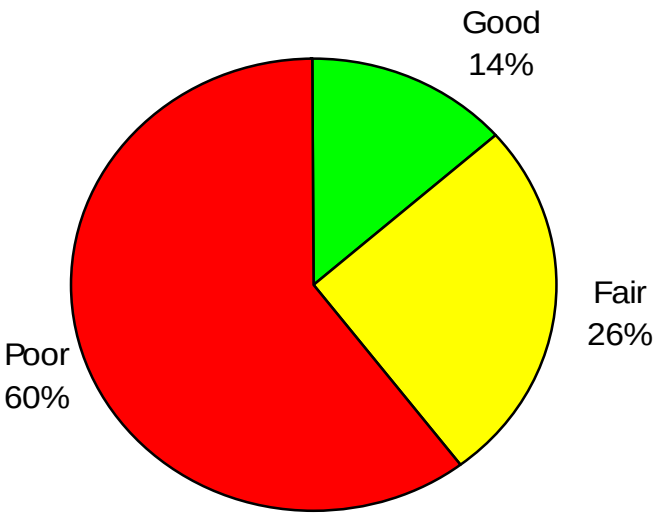


MARYLAND DEPARTMENT OF NATURAL RESOURCES

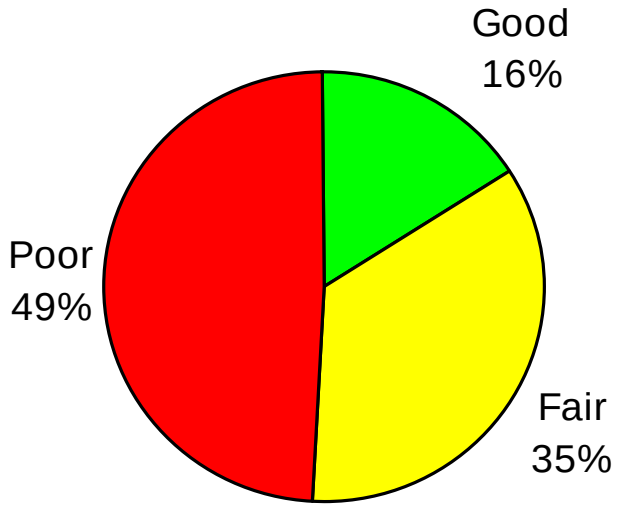
Monitoring and Non-tidal Assessment Division
Phone: 877-620-8DNR (x8623)
Web: http://www.dnr.state.md.us/streams/streamWaders.asp

Statewide Results

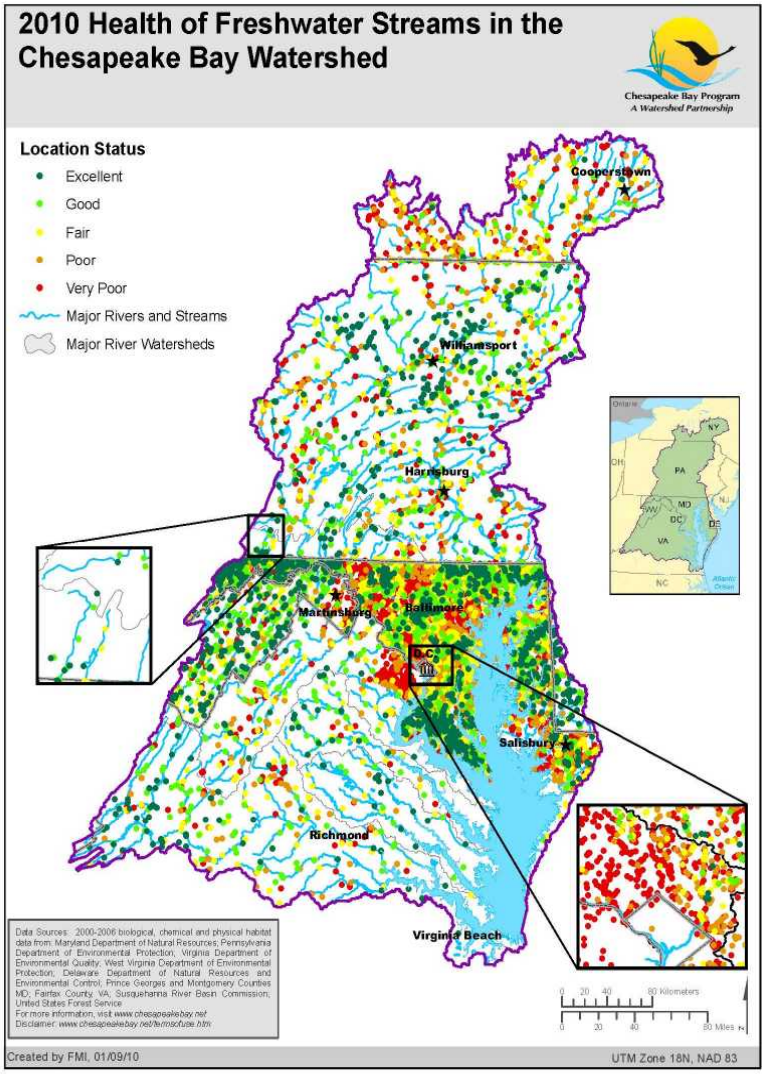
Stream Waders Family BIBI



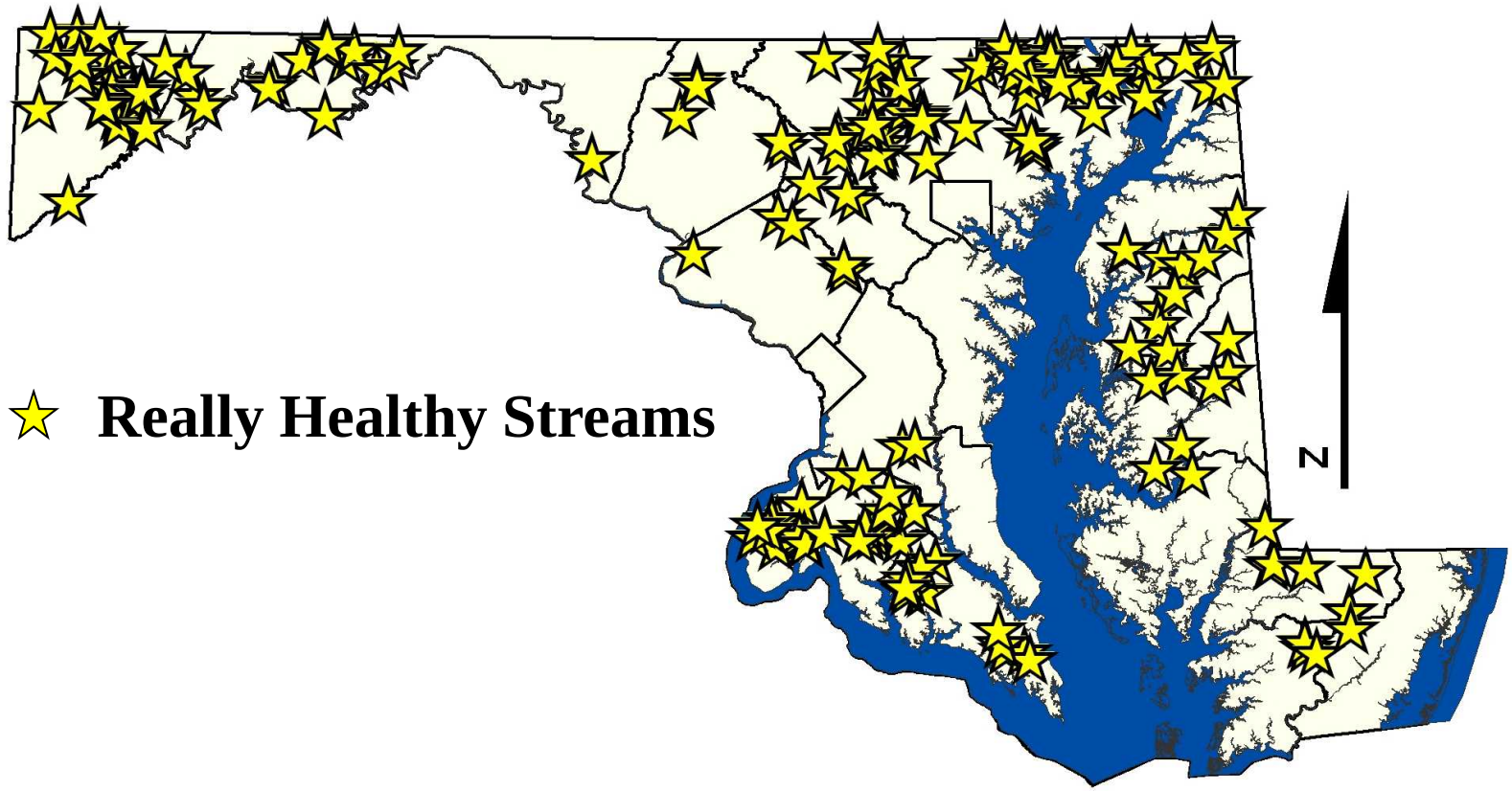
MBSS Genus BIBI



Maryland Stream Waders – 11 Years of Success!

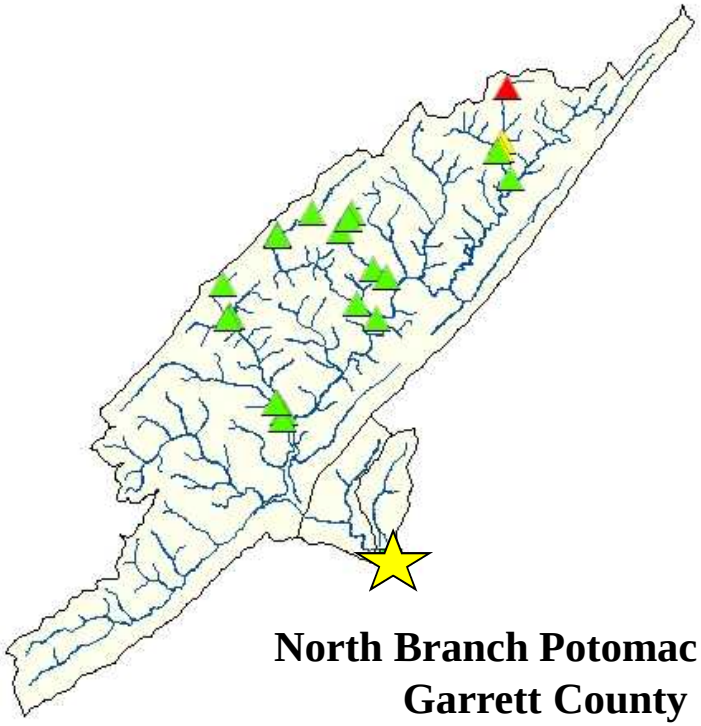


Antidegradation Policy Support



Maryland Stream Waders – 11 Years of Success!

Gwynns Falls, Baltimore Area



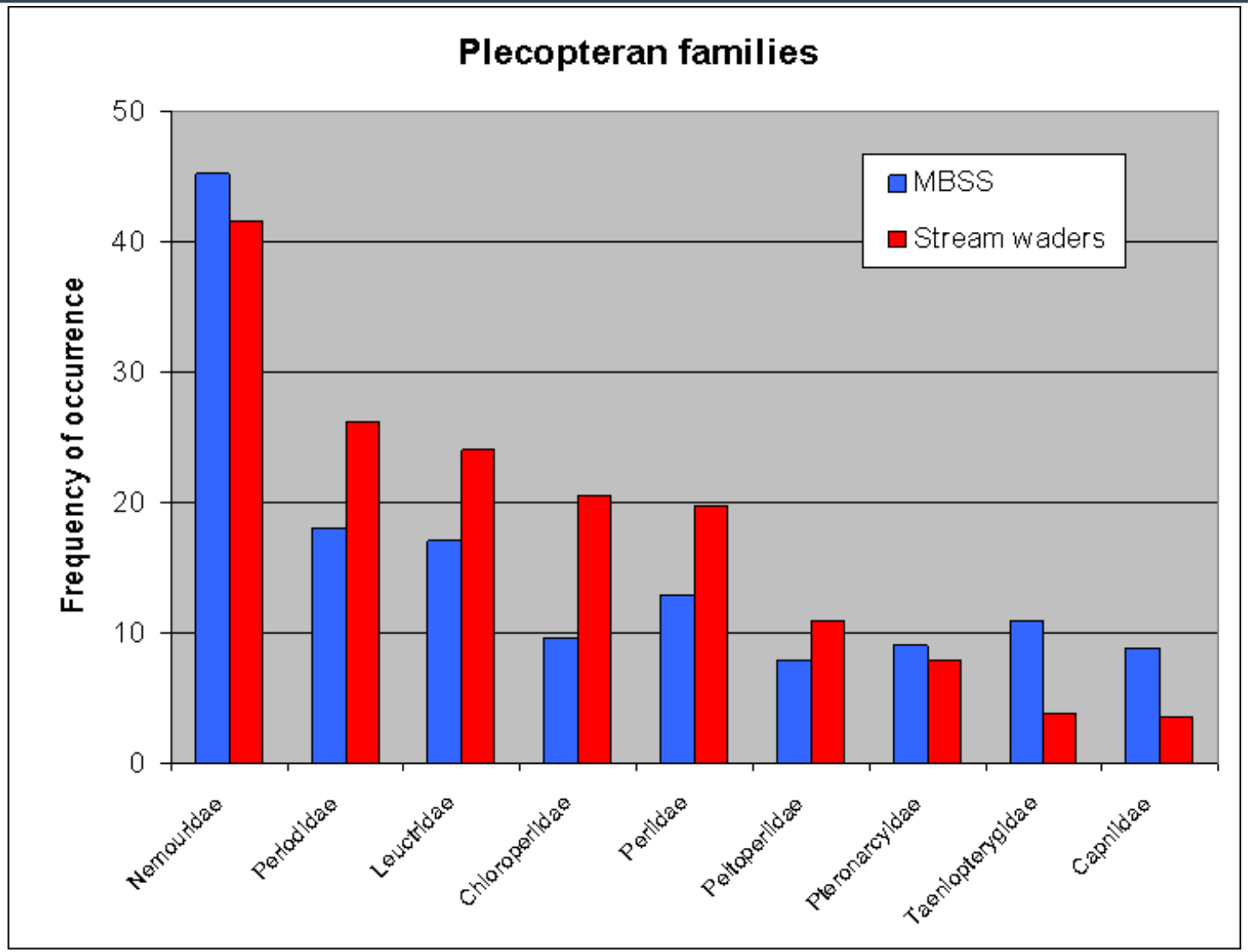
North Branch Potomac River, Garrett County

▲ **Stream Waders site**

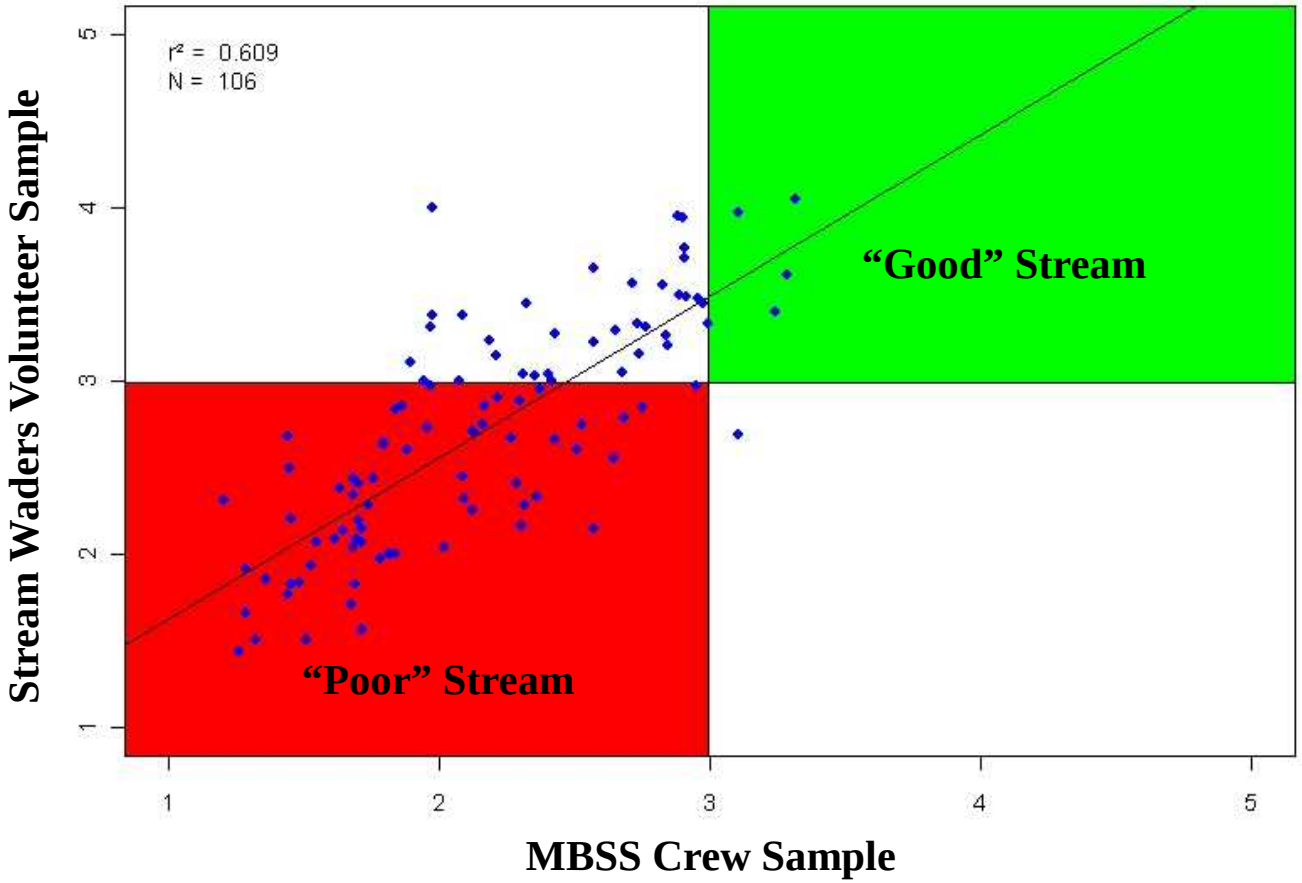
★ **Mbss site**

Maryland Stream Waders – 11 Years of Success!

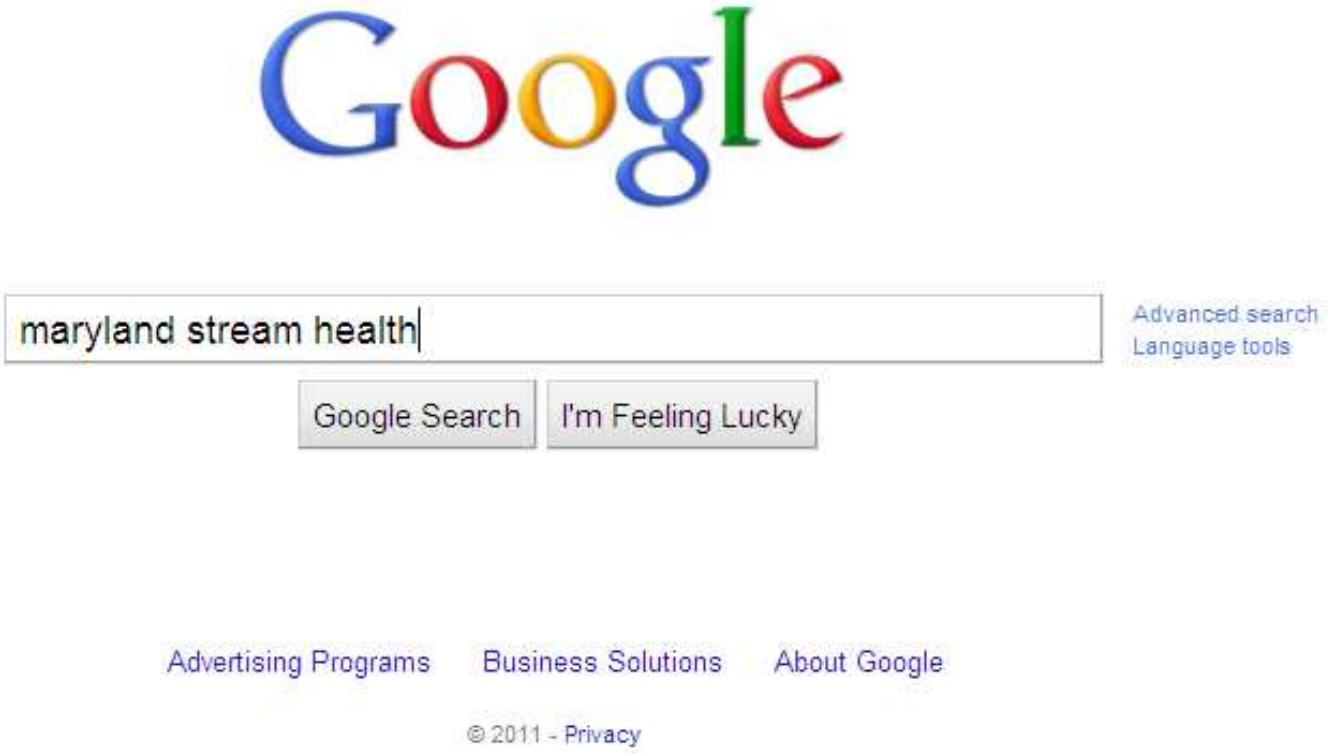
Maryland Stream Waders – 11 Years of Success!



Let's Compare!

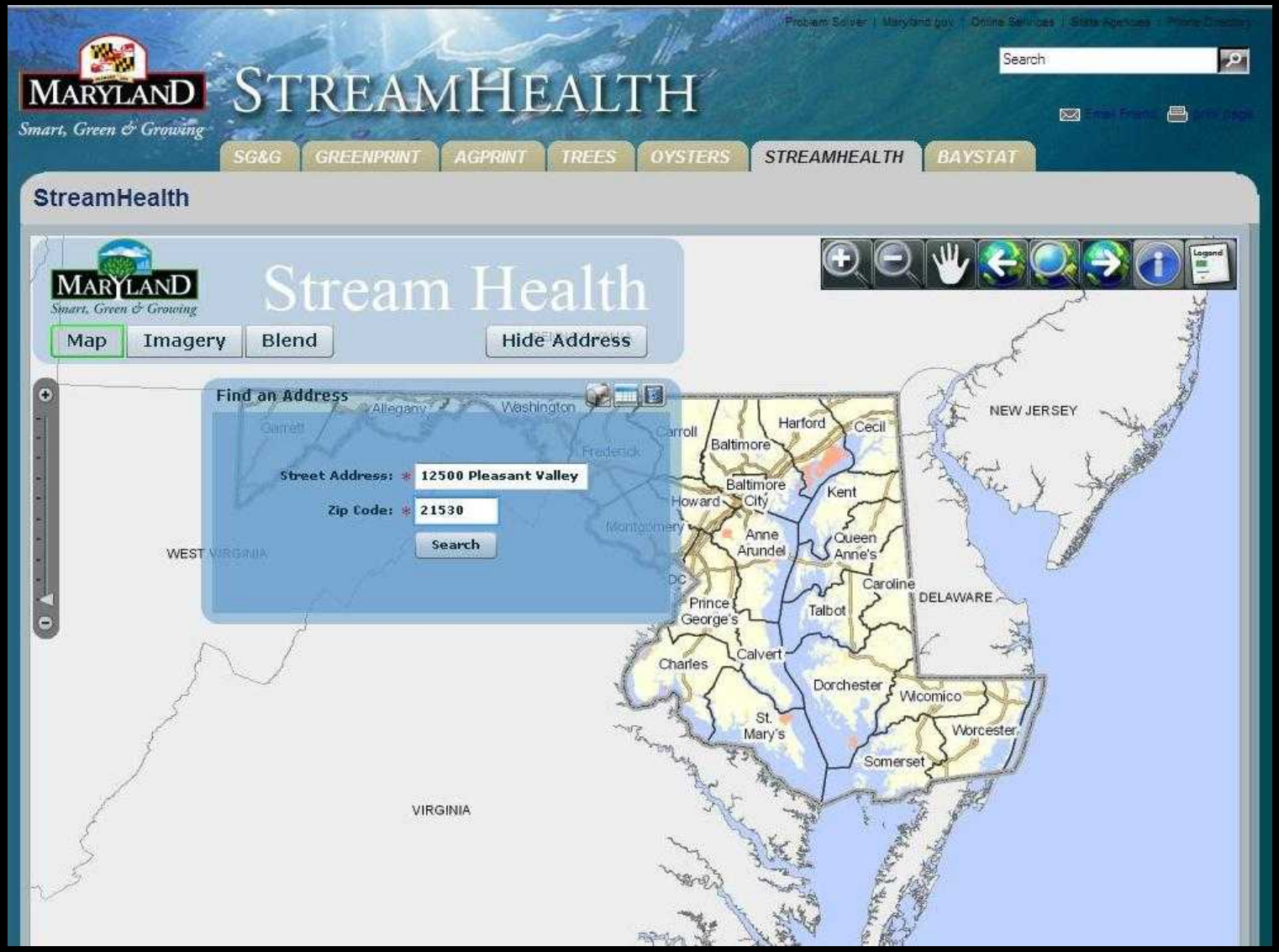


Maryland Stream Waders – 11 Years of Success!



Maryland Stream Waders – 11 Years of Success!

Maryland Stream Waders – 11 Years of Success!



Maryland Stream Waders – 11 Years of Success!

Maryland Stream Waders – 11 Years of Success!

Maryland Stream Waders – 11 Years of Success!

Rocky Gap Creek near Rock Gap Road in Allegany County

Site: **0107-02-2009**
Watershed: **Evitts Creek**

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

What does the IBI score mean?

The IBI score is a quantitative rating of the health of the macroinvertebrate assemblage found at each site. 20.0 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). 12.0 different kinds of EPT were found at this site. These types of bugs are sensitive to pollution- the presence of 12.0 different kinds is a good sign. 4.0 different families of Dipterans were collected at this site, generally indicating better stream quality. The combination of these factors (in a mathematical index) result in an characterization of the benthic macroinvertebrate community at this site as Good.

Site	Family	Percent of sample
0107-02-2009	Chironomidae, (non-biting midge)	37.6
0107-02-2009	Ephemerellidae, (spiny crawler mayfly)	18.3
0107-02-2009	Peltoperlidae, (roachlike stonefly)	6.4
0107-02-2009	Leuctridae, (rolledwinged stonefly)	5.5
0107-02-2009	Chloroperlidae, (green stonefly)	4.6
0107-02-2009	Uenoidae, (uenoid case maker caddisfly)	3.7
0107-02-2009	Hydropsychidae, (common netspinner caddisfly)	3.7
0107-02-2009	Elmidae, (riffle beetle)	3.7
0107-02-2009	Tipulidae, (cranefly)	2.8

Maryland Stream Waders – 11 Years of Success!

Maryland Stream Waders – 11 Years of Success!

Google “Maryland Stream Waders” or find us on Facebook