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Butler County Stream Team

March - 2011



Volunteer Stream Monitoring in Southwest Ohio
Next Sampling Day - March 12th

Remember - Coolers are picked up by 10:30

Boyd cooler is available until 11:30; bring samples to lab after

Flood Effects

Did you ever wonder what happens to fish and bugs in the streams when it floods? Are extreme flooding events as disruptive to them as they are to humans? To give a "critter's eye view" of the situation, here are some thoughts about how it feels to be a fish or macroinvertebrate in a flood.

Pennsylvania Fish and Boat Commission biologist Dick Snyder pointed out, after devastating 2004 floods, that flooding is a natural event to the animals that live in streams (see [article](#)), so "the rushing streams and rivers are little more than an inconvenience" for fish populations. "High waters may alter aquatic habitat and place stress on fishes, but for the most part the effects are short-term... To a fish, a flood feels much like walking up an alley during a strong windstorm feels to us. And fish react in pretty much the same manner we do; just like we'll duck into a doorway to get out of the wind, fish will seek out those areas where the force of the water isn't as great."

Areas of refuge can be as simple as a stream bottom where water moves more slowly or downstream of rocks or logs. "Calm eddies out of the torrent (like backwater areas) provide congregation points for fish to rest even if the pools are located in areas where they wouldn't normally be found, such as over a road or in a pasture."

In addition, many fish use flood times to move up into smaller streams where they breed. Shallow waters offer young fish refuge from predators, so small Butler County streams are important

Volunteer Spotlight

Charlie Saunders



Charlie and Mary Saunders on the Stream Team canoe trip, fall 2010

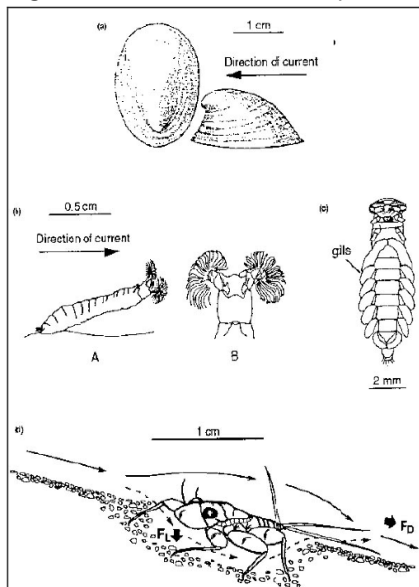
Some of you may have noticed a quiet, distinguished man working in the Stream Team lab some days.

It might have been Charlie Saunders, a volunteer who first found out about Stream Team at the Great Miami River Days in 2007 and has been collecting 4 or 5 samples in the Pleasant Run Creek basin ever since, often with his friend Kent Ernsting. Charlie has become one of our "consistent samplers", which means he collects the same sites every month, or if he can't collect them, he gets someone else to. He also is one of the folks who joined us in our training day last June to become a level two sample collector; this adds validity with OEPA.

Charlie not only collects samples, but he often makes it to lab to help

nursery grounds that replenish populations in the Great Miami River and its larger tributaries.

So fish are OK, but what about the invertebrates that fish eat? Well, they too are adapted well for this natural part of their environment. In fact, during low water, many invertebrates seek out the areas of rapid flow where oxygen levels are highest. Some of their adaptations are shown



below.

Figure (a) shows how the streamlined shape of a freshwater mollusk called a **limpet** directs water up and over its single shell while it suctions onto a hard surface. A **black fly larva** (b)

attaches itself to the bottom with a ring of hooks that lock into a silk pad it lays on the rock surface. That allows these filter feeders to put their "mouths" - (B) feeding filaments - up into the water flow to catch whatever flows by. The shape of many **mayflies** (d) is very flat so they barely lift the water as it flows by. Their "spread-eagle" stance, with long legs and clawed feet, hold them firmly in place when the current is strong. Most invertebrates have **gills** (c) that filter oxygen out of the water, just like fish, that function superbly even in high flows. (Figure from [here](#))

Look forward in the next newsletter to other effects of flooding that may make it a little harder for fish and bugs ahh, anticipation ...!

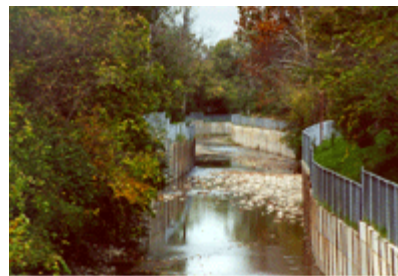
Crisis Spot

As you are out sampling or just out for a walk along the waterways and see something wrong, email us. We always want to hear from our volunteers, especially if there is a problem that can be corrected.

You are our eyes in the field, the first line of defense for streams in Butler County when there

do the analyses, too. Although you don't need any science background to join us in the lab, Charlie's training as a microbiologist helped Stream Team in revising the bacteria protocol last year. When we suddenly had a few months where NO bacteria showed up in our cultures, we realized we needed to do a "positive control", a culture known to contain bacteria, to be sure the media we use is working. So, thanks Charlie! That's become standard protocol.

Pleasant Run, where Charlie samples, is a really important creek, as any lawmaker in Fairfield would tell you, because it drains the highly suburbanized area of western Fairfield. This area has been plagued by flooding for decades, so Pleasant Run has been altered by building some levees, widening some channels, and even giving the stream a "cement corridor" to travel in some stretches.



Mark Your Calendars!

[March Sampling Day](#) -
Saturday, March 12th

[April Open Lab](#) and Sampling
Day - Saturday, April 9th

If you've been wondering what happens to your sample once you drop it off, come on by and check it out! We will be expecting you at our annual Open Lab day, where we will show you around the lab and not put you to work like we normally would if you stopped in on a sampling day!

Room 203, Boyd Hall, noon-3.

[Center For Watershed Protection Webcast](#) - Design,

is a problem. Once a concern has been reported to us, we can pass it along to the appropriate agencies. For instance, Carol Jones's interest in streams led her sister to make her aware of cleared brush in her local creek. When Carol contacted us, Doug Dirksing contacted Duke Energy, who was unaware of the mess and promptly cleaned it up. Success is sweet!

Thanks again for all you do for Butler County Stream Team!

Crisis Spot emails can be sent to Donna McCollum at mccollds@muohio.edu.

Installation & Maintenance of Constructed Wetlands & Regenerative Stormwater -
Wed, March 16, 12-2 p.m.
Butler County Engineers Office
1921 Fairgrove Ave.
Hamilton, OH

Learn how to boost the performance of constructed wetland designs and what research is telling us about runoff reduction and pollutant removal rates.

The webcast is free and you do not need to register, but an RSVP would be appreciated to:
Bob Lentz 513-785-4101

Any Ideas?

If you have ideas of things you'd like to see the Stream Team do, please let Donna know at mccollds@muohio.edu. For instance, if enough people are interested, we can open the lab up for macroinvertebrate identification again, or run another morning session to get people started knowing what bugs are in our streams.

If you have any comments, concerns, or suggestions, please contact us at mccollds@muohio.edu.

Butler County Stream Team Monthly Newsletter

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