

# Homemade macroinvertebrate equipment

## Kick Net Supports for Solo Sampling

by Eleanor Ely

Missouri's Stream Team Program has some very creative volunteer monitors. Two different volunteers independently came up with designs for frames to support a kick net when sampling alone. Richard Renth, a mechanical and electrical designer by profession, designed the rigid PVC frame. The flexible frame was designed by Larry Magliola.

Both frames are inexpensive and simple to make. Priscilla Stotts, one of the Stream Team Program's coordinators, says that the PVC frame is sturdier and less likely to fall over in the

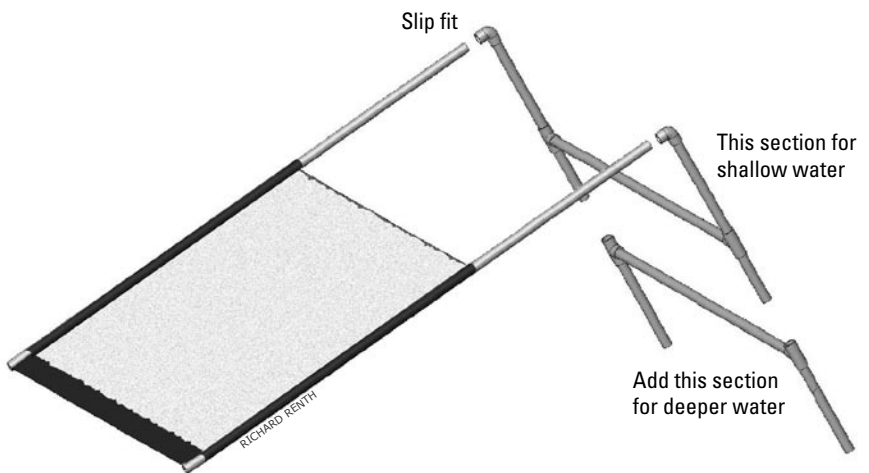
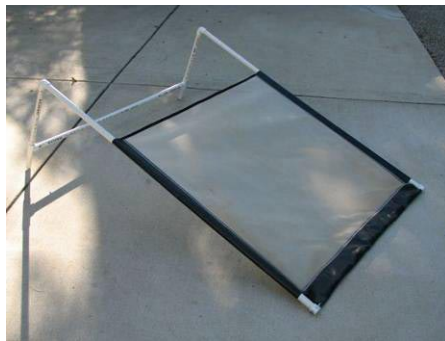
wind, while the flexible frame's adjustable legs make it easier to form the net into a pocket.

Missouri Stream Team kick nets are custom-designed with a deep bottom hem that can accommodate a length of chain to weight the net down. This is especially useful in mountainous areas where the water moves fast.

Instructions for building both standalone kick net supports are posted on the Stream Team website at [www.mostreamteam.org/howto.asp](http://www.mostreamteam.org/howto.asp).

### Rigid PVC frame

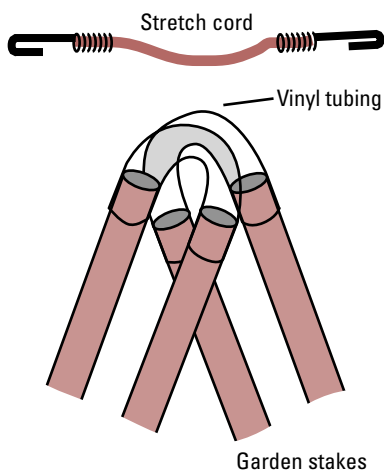
The photo on the cover shows Richard Renth using the kick net stand he designed. A heavy chain inside the bottom hem holds the net down. One or two rocks can be placed on the bottom edge of the net for extra insurance.



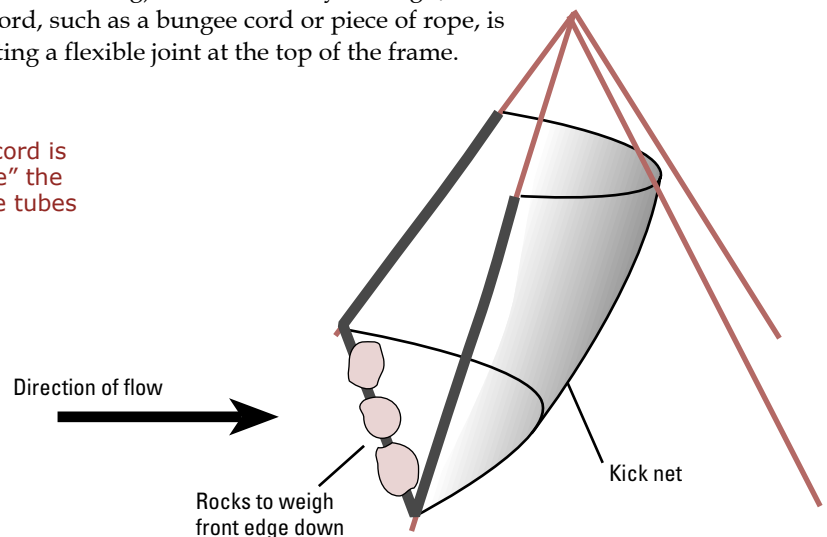
The PVC frame is adjustable to two different heights for use in deep and shallow water.

### Flexible frame

The flexible kick net frame is made from four steel-core plastic-coated garden stakes, 4 feet long and  $\frac{3}{8}$  inch in diameter, and two pieces (approximately 6 inches long) of clear soft vinyl tubing,  $\frac{7}{16}$  inch outside diameter and  $\frac{5}{16}$  inch inside diameter. A cord, such as a bungee cord or piece of rope, is used to tie the pieces of vinyl tubing together, creating a flexible joint at the top of the frame.



A bungee cord is used to "tie" the two flexible tubes together.



# Macroinvertebrate equipment continued

## Net Spoon

by David Wilson

Sorting benthic macroinvertebrates from the tray with forceps is a pain, and often results in rather badly mauled specimens. With a net spoon, it's much easier to catch the critters and they are virtually never damaged.



To make a net spoon, use an electric grinder to grind off the bottom of a plastic picnic spoon, leaving only the rim. Be sure to wear safety glasses while grinding. Use waterproof cement to glue a small piece of fine mesh netting to the back of the rim. After the cement has dried, trim excess netting with small sharp scissors.

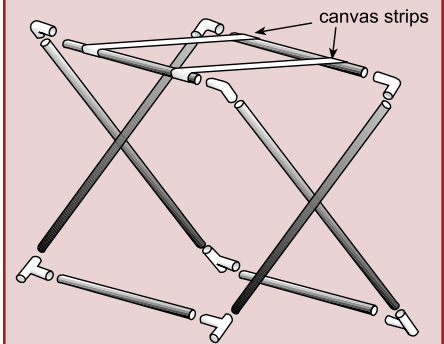
David Wilson is a volunteer monitor with the Huron River Watershed Council in Ann Arbor, Michigan.

## Bug Rack

Missouri Stream Team volunteers have created two bug rack designs, one made from PVC pipe and one from wood. After macroinvertebrates are collected in the kick net, the net is draped over the rack for sorting and identification. Detailed instructions for both types of bug rack are available at the Missouri Stream Team website.

An alternative is to buy a light-weight roll-up camping table.

### Homemade PVC-pipe bug rack.



## Homemade Sieve Bucket

by Dan Boward

Did you know that you can make your own handy-dandy macroinvertebrate sieve bucket at a fraction of the cost of a "store-bought" one? You'll need a 5-gallon plastic spackle bucket (we got ours free from a pickle producer), a drill, some stainless steel mesh screen (with a mesh opening appropriate for your sampling protocols), some tin-snips, and waterproof adhesive. Here are the basic construction steps:

1. Cut the bottom out of the bucket. Cut the inside out of the top, but leave the edge (the part that snaps the lid on) intact.
2. Remove the handle, drill holes in the new top and fasten the handle.
3. Cut a disk of the metal mesh, press it into the groove that will snap over the new bottom, snap the new bottom on (a hammer helps), and place a bead of waterproof permanent adhesive all the way around

the inside of the bucket where the mesh meets the bucket wall.

Dan Boward is a natural resources manager with the Maryland Department of Natural Resources and helps manage the Maryland Stream Waders statewide volunteer monitoring program. For more information: [dboward@dnr.state.md.us](mailto:dboward@dnr.state.md.us); 410-260-8605.

