

NOTE: Streamkeepers has improved on this design—see our website.

### MADEP-DWM Sample Collection Rod

The water levels in rivers are constantly changing. A weekend of heavy rains can turn your ankle-deep stream into a chest-deep torrent. This can be a problem when charged with repeated safe collection of water samples at specific locations. In addition to avoiding unsafe conditions, there is always the need to collect representative samples, which may not be accessible from shore or by wading in. One solution is to recruit volunteers with long legs and arms. Another solution is to attach your sample jars to the end of a long pole.

DWM has come up with a design that may help with your sampling efforts. It involves attaching a 4” clamp onto a telescoping aluminum pole (see figure 1). All parts are available at most well-stocked hardware stores, or home centers. The telescoping pole (usually used to wash windows) will cost ~\$10.00. The clamp (used by carpenters) will cost ~\$5.00. You will also need two nuts, bolts, steel washers, and neoprene washers (see figure 2). You’ll also need a drill, screwdriver, pliers, friction tape and waterproof glue.

#### Parts to Purchase

Aluminum Extension Pole	\$10.00
Carpenter’s Bar Clamp	\$ 5.00
2 nuts, 2 bolts, 2 steel washers, and 2 neoprene washers	\$ 2.00
Friction Tape	\$ 2.00
Waterproof Glue	<u>\$ 1.00</u>
TOTAL.....	\$20.00

#### Tools to Use

- Drill
- Screwdriver
- Pliers



Figure 1

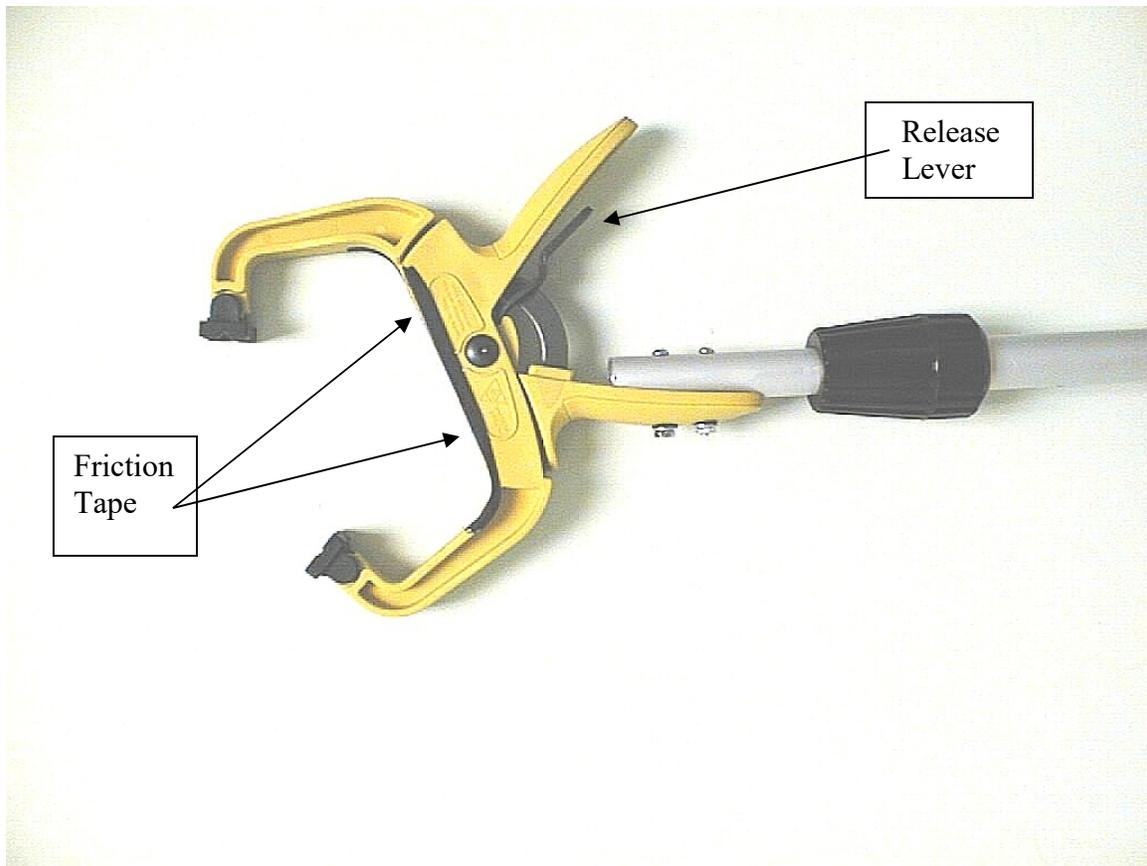


Figure 2

The telescoping pole we selected is aluminum, because it is lightweight and rust-free. It extends from 4' to 8'. The clamp we selected is a 4" bar clamp, as it holds 90% of our bottles. You may wish to bring the bottles you use to the store with you, and find out which clamp size is right for you.

To construct the sampling pole, start by removing the threaded end from the pole (most extension poles have a threaded end to attach a window brush or squeegee). Most threaded ends are pop-riveted on, and you can drill them out. Next, match up the clamp handle to the hole made by drilling out the rivet. Be sure to use the handle that does NOT have the release lever. You will want access to the lever when the clamp is closed. Mark the location of the existing hole, and the location of the second hole. Drill the second hole through the pole, and two corresponding holes in the clamp handle. Attach the clamp handle with the two bolts, washers and nuts. It's a good idea to use neoprene washers so the plastic clamp handle won't crack due to over tightening. If you're not using lock washers, put a drop of glue on the end of each nut. Next, add some friction tape (bicycle handle bar tape) to the inside of the clamp's jaws. This will prevent the bottle from slipping out of the clamp.

To use the collection rod, first rinse the clamp end of the rod in the stream you wish to sample. This will reduce the possibility of contamination from the previous station (or contamination from the trunk of your car!). Then, place a bottle in the clamp and squeeze

the clamp closed. Remove the cap from the bottle. Rotate the rod until the bottle is upside down. Immerse the bottle to the desired depth and then rotate the rod to fill the bottle (see figure 3). Once the bottle is full, remove it from the water, cap it and remove it from the clamp.



Figure 3

Do not extend the pole too far when sampling high velocity streams. You'd be surprised at how much force there can be on the pole. To avoid damaging (bending) the pole, it is recommended that you leave at least 1-foot unextended. You can mark this limit on the pole with a permanent marker.

When you have finished collecting your water samples at your first station, and have moved on to your next station, don't forget to rinse the rod BEFORE you attach your next bottle. Place the clamp end of the rod in the stream you now wish to sample, and swirl it in the water. This will reduce any possibility of contamination from your previous station (or contamination from the trunk of your car!). It's a good idea to put a small label on the rod to remind you to rinse the rod at each station prior to use. You can write this in permanent marker on the shaft of the pole. Also, since the pole is made of aluminum, be extra careful around power lines.