

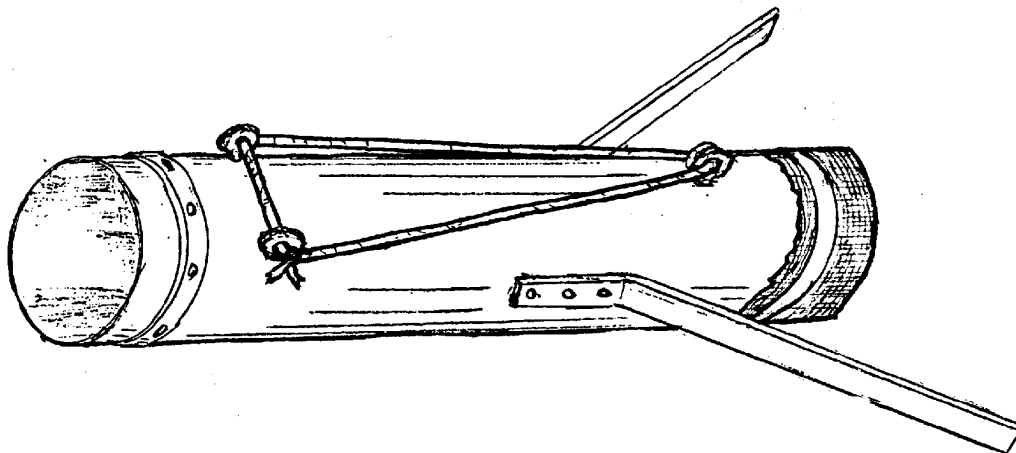
# ADOPT-A-STREAM MONITORING EQUIPMENT BUILDING INSTRUCTIONS BENTHIC MACROINVERTEBRATE SAMPLING

## TRANSECT DREDGE

Used to collect samples of mud and other soft sediments from the bottom of a pond, lake, or river.

### Materials:

1	galvanized sheet metal heat duct	5" diameter x 24" x 1/32"
1	band iron	1/2" x 36"
3	eye bolts	1/4"
6	nuts for eye bolts	
1	snap swivel	
2	hose clamps	3"
	window screening	8" x 8"
15'	nylon cord	1/4"
12	round head bolts	1/4" x 1/2"
12	nuts	
12	washers	
1	float	3" x 3"



### Building Instructions:

1. Connect the duct together to form a pipe by pushing the sheet metal joints into each other. They should automatically lock.
2. Cut a length of band iron the circumference of the pipe. Bend it into a circle by working it around a block of wood the same diameter as the pipe.
3. Drill six 1/4" holes, evenly spaced, in the circle.
4. Bolt the circle onto the outside of the pipe about 1" from one end of the tube with the 1/4" bolts and washers and nuts (on the inside).
5. Drill two 1/4" holes near the front of the pipe about 3" back and on top of the tube (see figure). Fasten two eyebolts into these; put one bolt on the inside and one on the outside. Place them as low to the surface as possible. This side is the top.

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6. On the other end of the top of the tube, drill a 1/4" hole about 6" from the back end opposite the two eyebolts on top. Put in the other eyebolt and fasten it like the others.
7. Cut two pieces of band iron 15" long. These will be the fins. They stabilize the dredge to keep it from rolling on the bottom of the waterbody when sampling.
8. Make a cut 3" from one end of each piece of band iron, about 1/3 of the way through and straight across the width. Make a 30o bend in the metal, using the cut as the pivot point.
9. Drill or punch three 1/8" holes in each 3" section of band iron and mark the sheet metal tube to meet the holes in the band iron. Drill 1/8" holes in the sheet metal tube. Use the pop rivet tool to attach the fin to the tube. Repeat the process for the other fin.
10. Screw the hose clamps together to make one large 6" clamp. Attach the screen on the back of the dredge with the hose clamp assembly.
11. To attach the rigging, run a 5' nylon cord through the back eye bolt, through one front eye bolt, then through the other, and tie it to the first end. Tie a 10' nylon cord to the back eyebolt, and a small, light float to the opposite end.

### **To Use:**

The dredge is tossed out as far as possible, and dragged or towed along the bottom, cutting and collecting the sediments along one thin strip, or transects. Carefully invert the dredge over a bucket or light-colored pan to remove the bulk of the collected materials. Rinse the remaining materials from the dredge with a wash bottle into the observation pan.