



Macroinvertebrate Monitoring Gear

Updated January 2024



For each monitoring team, you will want the following gear.

ITEM	PRICE (2023) Does not include possible shipping costs	SOURCE	NOTES
Five-gallon bucket	\$5-15	Hardware stores	To store your gear, and also makes for decent stools. A bucket is convenient, but other storage systems of your choice can work just as well.
D-Frame Collection Net Option 1	\$108.00	www.fishersci.com Search LaMotte net	Plastic, with expandable handle. Nets should be 1 mm (1000 um).
D-Frame Collection Net Option 2	\$200.97	Wildco https://shop.sciencefirst.com/wildco/750um-d-frame-dip-net/7713-d-frame-net.html	Wood Handle. Nets should be 1 mm (1000 um).
Waders	\$50-\$125	Amazon or sporting goods stores	Get a variety of sizes. The Cabela's Three Fork Lug Sole Chest Waders are a classic choice that can last 10+ years with proper care, but you can find cheaper alternatives nowadays.
Sorting Tray Option 1 (Standard White Tray)	\$25.95	Amazon Link	If this particular item goes away, look for white plastic deep trays. Get something at least 2-4 inches deep. If it is too deep, it can become hard to find specimens. You want 4 per team.
Sorting Tray Option 2 (Refrigerator Tray)	\$20-\$40	Stores that sell refrigerators. (These are the trays that go under a fridge or freezer in case of leakage). https://www.homedepot.com/b/Appliances/Pan/N-5yc1vZbv1wZ1z1bx9p	This is a cheaper alternative option that works well; a really big white tray that takes up considerable room in a vehicle and in storage but is easy to find bugs on. Buy 2 per team.
Featherweight Forceps	\$1.16 each	https://shop.sciencefirst.com/wildco/invertebrate-counting-trays/6572-forceps-straight.html	You want to have at least 3 forceps for each group that goes out; more if the team is large.
Eye Droppers	\$3.99 for 20	Amazon, Rienar White 3 ML Plastic Eye Dropper	Get plastic eyedroppers so you can cut off the tips to make the

			openings wide enough to capture small insect
Specimen Jars	25 cents each	https://www.thecarycompany.com/2-oz-38mm-38-400-natural-pp-jar	2 oz plastic jars; they need to have airtight seals. More expensive jars can be found in the glass variety.
Lids for the Jars	40 cents each	Phenolic (Bakelite) Closures - Black, 38-400, Polyseal https://www.mjspackaging.com/product/phenolic-bakelite-closures/	These lids from MJS fit the jars from the Cary Company very well. (Don't order the lids from Cary Company, the fit is loose).
Soft bristle brush	\$4-6	Amazon or most general merchandise stores	Useful for scrubbing a rock or branch into a bucket instead of carrying the heavy item to the banks.
Ice Cube Trays	\$5-10	Amazon or most general merchandise stores	Optional. Useful if the volunteers want to sort their macros on site.
Reusable water bottles	\$2-10	Everywhere; ask for donations from volunteers	Optional. Have some river water in a bottle is useful for wetting the samples, washing debris from the bottom of your net, and getting macros to swim & be more visible. Use a plastic, squeezable bottle that can expel water with some force (like a bike water bottle).
Tarps/plastic sheeting	\$20	Hardware stores.	Optional. A tarp is something for the volunteers to sit on instead of the wet ground. Buy a roll of plastic sheeting from a hardware store and cut it into usable pieces. Spray, dry and refold it after every event.
Garbage Bags	\$10-20	Hardware and general merchandise stores.	Optional. For small scale trash that your volunteers will find while doing their monitoring work.
1 Decontamination Kit (see below)			Required. Clean your gear before you go to any other location to prevent spread of nonnative species.

DECONTAMINATION KIT CONTENTS (See: <https://www.hrw.org/volunteer/decontaminate/> for instructions and full list of gear. The below equipment makes up the barebones required elements)

ITEM	PRICE (2020)	SOURCE	NOTES
Three to five-gallon bucket	\$5-10	Any hardware store	Contains your decontamination gear.
Lint Roller	\$2-4	Amazon and general	

		merchandise stores	
Spray bottle for diluted bleach (8 oz or larger)	\$1-5	Amazon and general merchandise stores	
Spray bottle for tap water (16 oz or larger)	\$1-5	Amazon and general merchandise stores	
Soft-bristled scrub brush	\$4-6	Amazon and general merchandise stores	
Hoof pick	\$5-10	Amazon and farming stores	

OTHER GEAR TO HAVE HANDY:

ITEM	PRICE (2020)	SOURCE	NOTES
Ethanol (preservative)	\$40/gallon.	Amazon	Many scientific supply companies' sell ethanol; currently Amazon seems to sell it for the cheapest because of the free shipping. Use 70% ethanol as an insect preservative. You can buy higher strength and dilute it down.
Reel-style measuring tapes	\$20	Hardware store	Optional. Useful in MiCorps habitat studies.
Yardsticks	\$10-20	Hardware store	Optional. Useful as a depth measurement.
Bleach		General merchandise store	Replace it every year as bleach goes bad. Used in the decontamination kits.

MACROINVERTEBRATE BIBLIOGRAPHY (sorted from least to most technical):

ITEM	SOURCE
Voshell, J.R. Jr. 2002. A guide to common freshwater invertebrates of North America. McDonald & Woodward, Blacksburg, VA. 442 pp.	Widely available.
Bouchard, R.W., Jr. 2004. Guide to Aquatic Invertebrates of the Upper Midwest: Identification Manual for Students, Citizen Monitors, and Aquatic Resource Professionals. University of Minnesota.	https://midge.cfans.umn.edu/midwest-guide
Hilsenhoff, W.L. 1995. Aquatic insects of Wisconsin: Keys to Wisconsin genera and notes on biology, habitat, distribution and species. Publication #3 of the Natural History Museums Council, University of Wisconsin-Madison. 79 pp.	An older key that was once the go to, it is becoming increasingly harder to find. As of now, available on amazon.com .
Merritt, R.W., Cummins, K.W. An Introduction to the Aquatic Insects of North America. 5th ed. (highly technical)	Widely available.