



Macroinvertebrate Monitoring Gear



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

ITEM	PRICE (2020)	SOURCE	NOTES
Five-gallon bucket	\$5-10	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	\$134.57	https://bioquipinc.com/	Expensive, but can last many, many years.
Waders	\$50-\$100	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	https://www.wardsci.com/store/ , Tray with Pour Lip	This is the classic macroinvertebrate sorting tray option but not cheap. Buy 3-4 per team.
Sorting Tray Option 2 (Refrigerator Tray)	\$20-\$30	Stores that sell refrigerators. (These are the trays that go under a fridge or freezer in case of leakage).	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	\$6.25	https://bioquipinc.com/	These lightweight forceps won't cut your specimens in half. Buy 4 per team.
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	~\$0.75 each, purchasing a case (288 jars) may be required	www.mjspackaging.com , 2 oz. flint glass AC jar, 38-400	2 oz jars; glass or plastic, but they need to have airtight seals. The linked jars are expensive but high quality; alternatives are welcome at your discretion.
Lids for the Jars	~\$0.31 each	www.mjspackaging.com , 38-400 black Phenolic closure with polyseal cone liner	These poly-seal lids fit the recommended jars above.
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 next, 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.hrwc.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)	\$38/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.
Spare net bags	\$41.66	Bioquip.com	Your net pole will last for decades; your net bags will last 5-10 years. These are replacements.
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.