

**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.comSearch 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](https://www.amazon.com/Regal-Pak-6-Piece-Plastic-Stackable/dp/B00B7MCLIE/ref%3Dsr_1_5?crid=292HUR0STNVC1&keywords=Deep+Plastic+Tray+white+2+inches&qid=1673468744&sprefix=deep+plastic+tray+white+2+inche%2Caps%2C118&sr=8-5&ufe=app_do%3Aamzn1.fos.18630bbb-fcbb-42f8-9767-857e17e03685) | 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). 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 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/**](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) | $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 NorthAmerica. 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. |