WHAT WE PROVIDE

In order to participate in River Watch Macroinvertebrate Sampling, our volunteers must attend a training where they'll learn proper sampling technique and sample processing

1 At training, groups will learn what, why and how to collect macroinvertebrates and upon completion will receive necessary equipment including a bug net, sieve, tools, and ethyl preservative.

2 The sample analysis cost will be covered once proper collection protocols are verified. 500 count of raw bug counts down to organism species for each sample will be produced from analysis.

3 Using CDPHE's EDAS (Ecological Data Application System) database, the MMI score, along with the auxiliary metrics and Tolerance Indicator Values (TIV) are calculated from the raw counts

WHY SAMPLE MACROINVERTEBRATES

Understanding the importance of benthic macroinvertebrates to the health of a watershed involves several key aspects:

1 Indicator Species: serve as excellent indicators of water quality and ecosystem health because they exhibit a range of sensitivities to environmental stressors such as pollution, habitat degradation, and changes in water flow.

2 Long-Term Monitoring: these organisms have relatively long life cycles and are relatively immobile so changes in their populations over time reflect gradual shifts in environmental conditions.

3 Integrated Assessment: Bug counts provide insights into various aspects of watershed health, including habitat quality, nutrient cycling, energy flow, and biodiversity.

4 Cost-Effective and Practical: macroinvertebrate sampling is relatively inexpensive and can provide comprehensive information about ecosystem health. The group effort involved in River Watch sampling enhances community engagement and creates a more tangible data output

River Watch
Macroinvertebrate Sampling

Macroinvertebrate data is highly informative for water quality since the bugs that are present are indicative of overall stream health. Instead of a single snapshot of water quality parameters, macro data shows long-term conditions of a water body. Macro data metrics like MMI, %EPT, Evenness, & other diversity indices are critical in decision making processes and aquatic standards.

RIVER WATCH
PEOPLE. SCIENCE. PURPOSE.

GET INVOLVED

- Visit our website to see when and where our next training will be to become a certified volunteer
- Contact us directly to see alternative volunteer opportunities
- Send us your email to get our monthly newsletter and training information
- Follow our social media accounts (Facebook, Instagram & Twitter) for events and program updates

OUR CONTACT:

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ABOUT US

River Watch of Colorado is a community science program that collects water quality data in Colorado's streams so that we have a baseline of our river health and informs management decisions. River Watch is run by the 501c3 non-profit, River Science in partnership with Colorado Parks & Wildlife.

OUR MISSION

People. Science. Purpose.

Provide a hands-on science experience, learning the value and function of Colorado's rivers and water ecosystems. Generate high quality aquatic data over space and time for use in Clean Water Act, Colorado Parks and Wildlife, local and other decision making processes.
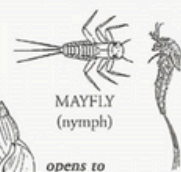
POLLUTION TOLERANCE GROUPS

In freshwater ecosystems, macroinvertebrates can be categorized into three groups based on their sensitivity to water quality. These groups provide insights into the overall health and condition of the aquatic environment.
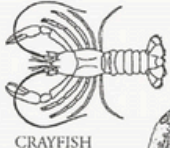
MACROINVERTEBRATE GROUPS
BEGINNER'S PROTOCOL – PICTURE KEY

GROUP 1 *These organisms are generally pollution-intolerant. Their dominance generally signifies EXCELLENT-GOOD WATER QUALITY*
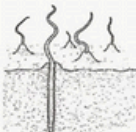
RIFFLE BEETLE (larva) · RIFFLE BEETLE (adult) · STONEFLY (nymph) · CADDISFLY (larva) · SNAIL · SNAIL opens to the right · MAYFLY (nymph) · MAYFLY (nymph)

GROUP 2 *These organisms exist in a WIDE RANGE of water quality conditions*

DRAGONFLY (nymph) · CRANEFLY (larva) · CRAYFISH · SOWBUG · FILTERING CADDISFLY (Hydropsychidae) (larva) · gills · BLACKFLY (pupa) · BLACKFLY (larva) · SCUD · HELLGRAMMITE (Dobsonfly) (larva)

GROUP 3 *These organisms are generally tolerant of pollution. Their dominance usually signifies FAIR-POOR WATER QUALITY*

MIDGE (larva) · MIDGE (larva) · MIDGE (pupa) · opens to the left · POUCH SNAIL (Physidae) · AQUATIC WORM