# EIM Help – Benthic Invertebrate Identification and Counts

Version 1.2
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## What are benthic invertebrates?

The *benthic zone* is the ecological region on or just beneath the sediment surface of oceans, lakes, rivers, or streams. Small, spineless organisms that inhabit this zone are called benthic invertebrates or *macro*invertebrates.

Researchers collect benthic invertebrate samples and send them to labs for sorting, taxonomic identification, and counting. They use counts to calculate biological metrics and indices, a measure of marine, lake, river, and stream health.

## What data should I enter into EIM?

Enter your **raw count data**.

Don't enter metrics or density estimates.

## How do I know if my taxa values are in EIM?

We have a long list of taxa in EIM, but not all taxa! We recommend that you upload your dataset and run Check Data to find missing EIM taxa values. Give a list to your EIM Data Coordinator and we will add them to EIM. To see EIM's taxa values, go to the EIM Help Center.

## What if I have other types of counts data?

If you are

- Identifying and counting aquatic vertebrates, download our help for Aquatic Vertebrate and Shellfish Counts.
- Identifying and counting periphyton, download our help for Periphyton Counts.

# How do I enter benthic counts data?

Use this table and the Result help document for entering your data.

| Column | Field Name | *Valid Values* and Requirements |
|---|---|---|
| D | Field Collection Type | *Sample* |
| F | Field Collection Start Date | MM/DD/YYYY |
| H | Field Collection End Date | Enter only if you left the sampling device in the stream and retrieved later. An example is a "bug bag" that remains in the stream for days or weeks. |
| J | Field Collection Comment | Optional |
| K | Field Collection Area | Enter the numeric collection area. For example, enter "8" if you had a kick net area of 8 square feet. If you composited multiple samples into a single sample container, enter the summed area of all of the samples you composited. |
| L | Field Collection Area Units | Examples:<br>*ft2*<br>*m2* |
| M | Field Collection Reference Point | Enter this info if pertinent to your study design. Common for marine benthic sampling.<br><br>Download our Field Collection Depth or Height document for help. |
| N | Field Collection Upper Depth | |
| O | Field Collection Lower Depth | |
| P | Field Collection Depth Units | Examples:<br>*in*<br>*cm* |
| V | Sample Composite Flag | *Y* or *N* |
| X | Sample Matrix | *Solid/Sediment* |
| Y | Sample Source | *Freshwater Taxonomy* or *Salt/Marine Taxonomy* |
| AA | Sample Collection Method | Examples:<br>*D-FRAMEKICKNET500UM*<br>*VANVEEN.10*<br><br>Search EIM for Method valid values and descriptions. If you need a method added, contact your EIM Data Coordinator. |

| Column | Field Name | *Valid Values* and Requirements |
|---|---|---|
| AB | Sample Preparation Method | Required if applicable.<br><br>Examples:<br>*ID-COUNT-PREP500*<br>*BENTH.5MIC*<br>*SIEVE-0.5MM*<br>*SIEVE-1.0MM*<br><br>Search EIM for Method valid values and descriptions. If you need a method added, contact your EIM Data Coordinator. |
| AG | Sample Percent Sorted | Enter the percent of the sample the lab sorted, such as "50" if they sorted half the sample. Enter the numeric value; don't include the percent sign.<br>Usually "100" for marine samples. |
| AH | Result Parameter Name | *Number of Individual Organisms* |
| AJ | Lab Analysis Date | Enter a date accurate to the month or year (benthic samples aren't identified and counted in one day). MM/DD/YYYY format. |
| AK | Lab Analysis Date Accuracy | *"M"* for month *or "Y"* for year. |
| AM | Result Value | Enter the number of individual organisms counted for each taxon. |
| AN | Result Value Units | *Count* |
| AY | Result Method | Examples:<br>General protocol:<br>*ID-COUNT*<br>Specific protocols – see Methods for descriptions:<br>*ID-COUNT-LEVEL1*<br>*ID-COUNT-LEVEL2*<br>*ID-COUNT-LEVEL3*<br><br>Search EIM for Method valid values and descriptions. If you need a method added, contact your EIM Data Coordinator. |
| BE | Result Taxon Name | Search EIM for Taxa valid values. |
| BF | Result Taxon TSN | |

| Column | Field Name | *Valid Values* and Requirements |
|---|---|---|
| BG | Result Taxon Unidentified Species | Use this field only if the lab wasn't able to positively identify a taxon and reported as SP1, SP2, etc. Enter the lab's SP# designation into this field and **enter the next highest taxonomic level (usually Genus) into the Result Taxon Name field.**<br><br>Download our Unidentified Species Data document for more help. |
| BH | Result Taxon Life Stage | Important! Populate this field if there is more than one life stage for a taxa in a sample, otherwise EIM will see the records as duplicates.<br><br>**Freshwater taxonomy:** Because freshwater macroinvertebrate samples contain mostly larvae, only populate this field if it's not larvae.<br><br>**Salt/Marine Taxonomy:** Because marine benthic samples contain mostly adult taxa, you only need to populate this field if it's not adults.<br><br>**Valid values:**<br>*Adult*<br>*Egg*<br>*Juvenile*<br>*Larva*<br>*Megalopa*<br>*Nauplius*<br>*Nymph*<br>*Pupa*<br>*Unknown*<br>*Zoea* |

# Document revision history

| Revision Date | Revision No. | Summary of Changes | Reviser(s) |
|---|---|---|---|
| 01/25/19 | 1.0 | Combined 2 help documents into one: "Freshwater Benthic Macroinvertebrate Identification and Numeration (Counts)" & "Marine Benthic Organisms – Identification and Numeration (Counts)". Updated information throughout on how to enter data. | KC |

| Revision Date | Revision No. | Summary of Changes | Reviser(s) |
|---|---|---|---|
| 12/07/20 | 1.1 | Added section on benthic macrofaunal size classification and biomass | KC |
| 11/06/25 | 1.2 | Removed section on benthic macrofaunal size classification and biomass. | KC |