

WQX 3.0 Benthic Macroinvertebrate Best Practices

WQX User Call
August 27, 2020



Background

- Convened Biological Workgroup to determine requirements
- Goals:
 - Make datasets more user-friendly
 - Promote consistency when submitting data
 - Maximize the extent data can be reused
- Created a best practices document addressing new and important data elements





Assemblage Sampled Name & Biological Intent

- Assemblage is the group of organisms that co-occur in the same trophic or spatial relationships, such as benthic macroinvertebrates
 - Used to derive metadata requirements
 - Required
- Biological intent is the goal of the assessment such as species density or population census
 - Helps users understand the data to expect
 - Required

Habitat Selection Method

- Targeted vs. Non-Targeted
- Most productive habitat is sampled with a targeted method
 - More likely to capture all taxa
- Non-targeted uses a systematic sampling technique
 - Often more quantitatively representative
- Conditionally required
- New field in WQX 3.0





Collection Effort

- Time-Constrained
 - Collection Duration Measure and Units
- Area-Constrained
 - Collection Area Measure and Units
 - Needed along with Proportion Sample Processed to calculate total abundance
 - New fields in WQX 3.0
- Constrained by staff or equipment
 - Gear Procedure Measure and Units
 - New fields in WQX 3.0
- Optional but recommended

Sample Collection Equipment Name & Net Mesh Size

- Equipment such as D-frame net can impact what taxa or life stages are captured
 - Optional but recommended
- Net mesh size and net surface area used in sampling can also impact what taxa or life stages are captured
 - Used with net type such as non-tow
 - Optional but recommended





Characteristic Name

- Characteristic name is the parameter being monitored
- Usually a count with the value of the count being the result
- Required

Target Count

- Sorter will count a certain number of individual specimens and stop
- Useful in determining data comparability or if the data user needs to randomly subset the data before use
- Conditionally required
- New field in WQX 3.0



Proportion Sample Processed

- Prior to sorting the sample is placed in a sampling grid where a sorter chooses a subset of the sample for identification
- This information is important to know when aggregating data
- Conditionally required
- New field in WQX 3.0

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√	∅	√	∅
∅	∅	∅	∅

Target Taxonomic Levels



- Organizations identify specimens to a certain level of taxonomic resolution and life stage
- Data users need to know this information to determine if a life stage or taxon was not encountered or was deliberately excluded
- Also important to know whether identification is done to the genus level or the family level
- Should be specified in Sample Collection Method

Subject Taxonomic Name & Subject Taxonomic Name User Supplied

- Subject taxonomic name is the name of the specimen identified
 - Required
- Subject taxonomic name user supplied is for organizations who use a preferred name that may be different than WQX domain values
 - Used with subject taxonomic name user supplied reference text
 - Optional
 - New field in WQX 3.0





Uploading QA/QC Documents

- QAPP outlines data and measurement quality objectives of a monitoring program and contains metrics to quantify data quality
- Data users use the QAPP to screen for comparable protocols and comparable data quality
- Optional but recommended to upload at the Project or Activity level

Status

- New data elements included with WQX 3.0
- EN users can still submit to WQX 2.2, but must move to WQX 3.0 to use new data elements
- WQX Web users have already been migrated to WQX 3.0
- Best practices document is available at:
<https://www.epa.gov/sites/production/files/2020-08/documents/wqx-benthics-best-practices-guide.pdf>

A wide-angle photograph of a sunset or sunrise over a body of water. The sky is filled with large, dark, and textured clouds that are illuminated from below by the sun, creating a vibrant orange and yellow glow. The sun is visible on the right side of the horizon, partially obscured by clouds. The water in the foreground is dark and calm, reflecting the light from the sky. The overall mood is serene and majestic.

Questions?

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