



**Maryland Biological Stream Survey  
BENTHIC MACROINVERTEBRATE  
SAMPLING CERTIFICATION**



**FIELD AUDIT CHECK LIST**

Applicant Name \_\_\_\_\_

Date of Audit \_\_\_\_\_

Stream Name \_\_\_\_\_

MBSS Auditor \_\_\_\_\_

Auditor Site Name \_\_\_\_\_ **-O**

Applicant Site Name \_\_\_\_\_ **-D**

NOTES: A check mark under Yes means that the requirements of the element are fully met. A check mark under No means that the element was not performed correctly. A "P" under Yes means that the requirements of the element are partially met; this must be explained under Comments. A (1) after the element indicates that the element is essential and may be cause for denying certification if the applicant fails to complete the element successfully.

Element Evaluated	Yes	No	Comments
<b>Equipment Checklist</b>			
500 (or 540) micron D-Net (at least 10" high hoop)			
MBSS Sampling Manual			
100 meter measuring tape and flagging			
Spring Index Period Data Sheets			
Spare net bag for D-Net			
95% Denatured ethanol (isopropyl is OK but not recommended for long-term storage)			
Chest Waders (no felt soles)			
Benthic sample container labels (in and out)			
Chain-of Custody Form			
Benthic sample containers			
500 (or 540) micron benthic sieve bucket			
Decontamination equipment and supplies (note: this is not needed if the applicant will be air drying equipment for at least 48 h but he/she must be aware of what equipment and supplies are needed to actually decontaminate)			

Element Evaluated	Yes	No	Comments
<b>Arrival and Setup</b>			
Confirms that sample event is within the MBSS spring index period			
Properly determines if the site is sampleable			
Correctly measures and marks site with 0m and 75m clearly flagged (midpoint may be provided by auditor)			
Inspects D-net for holes and organisms carried from other sites (1)			
Confirms that D-net mesh is 540 microns (500 microns is acceptable)			
Inspects sieve bucket for holes and organisms carried from other sites (1)			
Confirms that sieve bucket mesh is 540 microns (500 microns is acceptable)			
Confirms that adequate benthic sample containers are available			
Confirms that inside and outside benthic sample container labels are available			
Confirms that adequate 95% ethanol preservative is available			

Element Evaluated	Yes	No	Comments
<b>Sampling</b>			
Takes care to minimally disturb habitats to be sampled while walking stream channel to assess habitat proportions			
Independently and correctly determines productive habitat proportions			<b>Applicant</b> <input type="checkbox"/> Check if used as common _____ R; _____ R/W; _____ L; _____ M; _____ U  <b>Auditor</b> <input type="checkbox"/> Check if used as common _____ R; _____ R/W; _____ L; _____ M; _____ U
Does not sample in less preferred habitats (when preferred habitats are available) and those that are unstable and/or with little/no flow			
Rubs large sticks and stones in riffles to dislodge organisms			
Correctly samples each habitat working upstream			
Riffle habitat is disturbed 5-8 cm below surface			
Takes care to empty D-net if stream water flow through the net becomes restricted			
Keeps accurate records of area of each habitat sampled			
<b>Processing, Preservation and Safety</b>			
Correctly transfers sample material to sieve bucket			
Correctly chooses, inspects, and discards appropriate material (biotic and abiotic) from sieve bucket			
Correctly washes fines from sample material in sieve bucket using a gentle up/down- slight circular motion			
Correctly transfers sample material from sieve bucket to sample bucket, including washing sieve bucket			
Places appropriate amount of sample material and preservative in sample bucket (1)			
Correctly uses inside and outside benthic sample labels (1)			
Ensures a tight-fitting lid and gently mixes sample and preservative			
Uses proper disinfection solution and technique (1)			
Uses non-felt sole waders (1)			

Habitat Proportions Element: R=Riffle; R/W=Rootward/Woody Debris; L=Leaf Pack; M=Macrophytes; U=Undercut Banks

Revised by Dan Boward on January 31, 2019