

Stream Quality Assessment: Data Analysis Worksheet



Index	Explanation	Your Calculations	Criteria			Your Results
			Impaired	Potentially Impaired	Unimpaired	
% Worm	$= \frac{(Aq. Worms + Roundworms + Flatworms)}{Total Bugs} \times 100$		> 30 %	10 to 30 %	< 10 %	
% Midge	$= \frac{Midges}{Total Bugs} \times 100$		> 40 %	10 to 40 %	< 10 %	
% Aquatic Sowbug	$= \frac{Aquatic Sowbugs}{Total Bugs} \times 100$		> 5 %	1 to 5 %	< 1 %	
% Snail	$= \frac{Snails}{Total Bugs} \times 100$		--	0 %, or > 10 %	1 to 10 %	
Number of Groups			≤ 11	--	> 11	
% Dominant Group	$= \frac{Most Abundant Group}{Total Bugs} \times 100$		> 45 %	40 to 45 %	< 40 %	

% Caddisflies, Mayflies, and Stoneflies	$= \frac{(Caddisflies + Mayflies + Stoneflies)}{Total\ Bugs} \times 100$		< 5 %	5 to 10 %	> 10 %	
% Diptera	$= \frac{(Midges + Mosquitoes + Blackflies) + Horseflies + Craneflies}{Total\ Bugs} \times 100$		< 15 %, or > 50%	15 to 20%, or 45 to 50%	20 to 45 %	
% Insects	$= \frac{(Total\ Diptera + Dragonflies + Beetles + Mayflies + True\ Bugs + Hellgrammites + Stoneflies + Caddisflies + Damselflies)}{Total\ Bugs} \times 100$		< 40 %, or > 90 %	40 to 50%, or 80 to 90%	50 to 80 %	
Hilsenhof Biotic Index	$\sum \frac{(\# \text{ in each group}) \times (\text{group's tolerance value})}{Total\ Bugs}$		> 7	6 to 7	< 6	

Benthic Aggregate Assessment

If five (5) or more indices are shown to be outside of the “unimpaired” criteria, the site is reported as “POTENTIALLY IMPAIRED.”

If four (4) or less indices are shown to be outside of the “unimpaired” criteria, the site is reported as “UNIMPAIRED.”

This site is: _____ .

Hilsenhof Tolerance Values

Taxon	Tolerance Value	Taxon	Tolerance Value
Aquatic Worm	8	Hydra	8
Beetle	4	Leech	8
Blackfly	6	Mayfly	5
Caddisfly	4	Midges	7
Clams	6	Mites	6
Crane-fly	3	Mosquito	5
Crayfish	5	Roundworm	8
Damselfly	7	Scud	6
Dragonfly	5	Snail	8
Flatworm	8	Sowbug	8
Hellgrammite	4	Stonefly	1
Horsefly	5	True Bug	5