

Stream Health Data Sheet

Record information on this sheet as you conduct assessments to determine the overall health of your stream. There are three stream assessments for this investigation: (1) **physical**, rating the condition of the stream habitat based on observed characteristics; (2) **biological**, using living animals present to indicate stream health; and (3) **chemical**, testing the water quality based on the chemical content of the stream. Use all three to get a more thorough rating of your stream’s health. You may share your findings and compare your data with others on maryland.fieldscope.org.

Stream Site and Stream Investigator(s) Information	
School Name	Date
Stream Study Site Name and/or Location Description	
Teacher	Group Members:
Latitude _____ degrees NORTH	Longitude _____ degrees WEST

Weather	
Yesterday	Today
Air Temperature _____ ° C or ° F	Air Temperature _____ ° C or ° F
Cloud Cover clear____ partly cloudy ____ cloudy ____	Cloud Cover clear____ partly cloudy ____ cloudy ____
Precipitation (amount) _____	Precipitation (amount) _____
How does weather affect the conditions of a stream?	
How could yesterday’s weather affect today’s field study?	

Physical Assessment: Stream Corridor Assessment

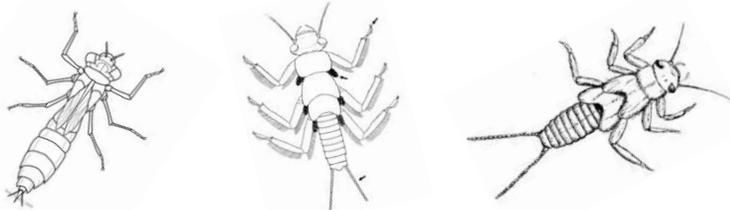
Observe the stream habitat in and around the water, and use the Stream Corridor Assessment photographs and accompanying data sheet to rank each characteristic. Based on your findings, what rating did you give to your stream habitat?

Stream Corridor Habitat Rating:

Biological Assessment: Macroinvertebrate Survey

Collection method:
Kick-Seine or D-Net (circle method used).
 If using a kick-seine, collect samples 3 times.
 If using a D-net, collect 20 scoops and record the number of scoops taken from each of the habitat areas in the table →

Benthic Habitat Sampled	
Habitat	# scoops
Riffle	
Rootwads/ woody debris/ leaf pack	
Submerged Vegetation	
Undercut Banks	
Other (specify):	
TOTAL	20



Check all of the macroinvertebrates that you find in your stream and calculate the stream's water quality rating [you may also record the number of each captured, but to calculate the rating at the bottom, only count each kind of animal once, regardless of the quantity found].

✓ SENSITIVE to pollution	✓ LESS SENSITIVE	✓ TOLERANT of pollution
<input type="checkbox"/> Caddisflies (except net spinners)	<input type="checkbox"/> Caddisflies, common net spinning	<input type="checkbox"/> Aquatic worms
<input type="checkbox"/> Mayflies	<input type="checkbox"/> Dobsonflies	<input type="checkbox"/> Black flies
<input type="checkbox"/> Stoneflies	<input type="checkbox"/> Fishflies	<input type="checkbox"/> Midge flies
<input type="checkbox"/> Watersnipe flies	<input type="checkbox"/> Crane flies	<input type="checkbox"/> Leeches
<input type="checkbox"/> Riffle beetles	<input type="checkbox"/> Damselflies	<input type="checkbox"/> Lunged snails
<input type="checkbox"/> Water pennies	<input type="checkbox"/> Dragonflies	
<input type="checkbox"/> Gilled snails	<input type="checkbox"/> Alderflies	
# of check marks (# of kinds found)	# of check marks (# of kinds found) – <i>count both columns under "less sensitive"</i>	# of check marks (# of kinds found)
# above x 3 = ____	# above x 2 = ____	# above x 1 = ____

Biological Water Quality Rating:
 Add up the numbers you calculated for all three categories, above. Write the total # here: _____
 Circle the rating that corresponds to the total of your columns.
Excellent: > 22 Good: 17 - 22 Fair: 11 – 16 Poor: < 11

Chemical Assessment: Water Quality Testing

- (1) Follow instructions provided with each test kit to test different parameters.
- (2) Record your data here:

DATA	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	Dissolved Oxygen (DO) % Saturation <small>See conversion chart</small>	pH	Phosphate (mg/L)	Nitrate (mg/L)	Transparency (cm)	Turbidity (JTU ~ = NTU)	Chloride (mg/L)	Conductivity (µs/cm)	Total Dissolved Solids (TDS) (ppm = mg/L)
Trial 1											
Trial 2											
Trial 3											

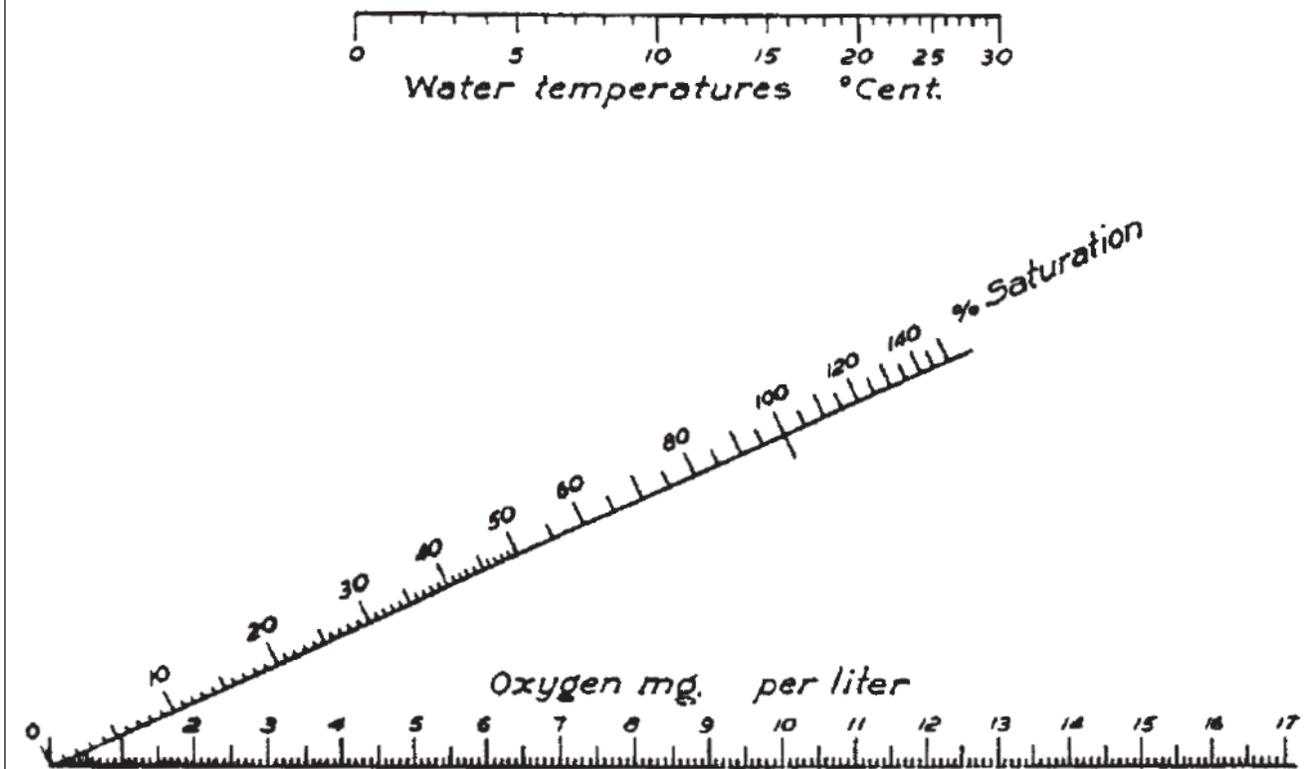
- (3) Circle the corresponding value here:

Water Quality Summation for Chemical Tests				
	EXCELLENT	GOOD	FAIR	POOR
Dissolved Oxygen (DO) % Saturation <small>(see conversion chart)</small>	80 – 120	70 – 80 120 – 140	50 – 70 > 140	< 50
pH (units)	7.0 – 7.5	6.5 – 7.0 7.5 – 8.5	5.5 – 6.5 8.5 – 9.0	< 5.5 > 9.0
Reactive Phosphate (PO ₄ X ³) (mg/L)	0 – 0.2	0.2 – 0.5	0.5 – 2.0	> 2.0
Nitrate (NO ³) (mg/L)	0 – 3	3 – 5	5 – 10	> 10
Chloride (Cl) (mg/L)	0 – 20	20 – 50	50 – 250	> 250
Transparency (cm)	> 65.0	65.0 – 35.0	35.0 – 15.5	< 15.5
Turbidity (JTU ~ = NTU)	0 – 10	10 – 20	20 – 30	> 30
Total Dissolved Solids (ppm = mg/L)	0 – 150	150 – 250	250 – 350	> 350
Conductivity (µs/cm)	0 – 171	172 – 247	248 – 500	> 500

Based on your tests and observations, how would you rate water quality overall (e.g., if you had some excellent, some fair, mostly good, you might give an overall of good)? Circle your answer:

Chemical Water Quality Rating: Excellent Good Fair Poor

FINDING THE PERCENT SATURATION OF DISSOLVED OXYGEN



To read this chart, use a straight edge. Place the straight edge on the mg/L of oxygen you have determined for your site, then place the other end of the straight edge on the water temperature you have measured. The point where the straight line passes through the line labeled “% Saturation” is your percent saturation.

Diagram reprinted from M.K. Mitchell and W.B. Stapp, *Field Manual for Water Quality Monitoring*

Overall Stream Health Assessment

Write your ratings from all three of the above tests, here:

Based on your tests and observations, how would you rate the health of your stream overall?

	Excellent	Good	Fair	Poor
Stream Corridor Assessment				
Macroinvertebrate Survey				
Water Quality Tests				

Overall Stream Health:

Key to Stream Macroinvertebrates

Izaak Walton League
Save Our Streams

