Stream Health Monitoring Sheet

Stream Name						
Site Name						
Date		**Time**				
Observer/s						
Weather	**Clear/Sunny**		**Cloudy**		**Raining**	

Stream Characteristics

Width (m)		**Wetted Width (m)**	

Depth (mm)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Average**

Velocity (m/s)	**1st Run**	**2nd Run**	**3rd Run**	**Average**

Channel Morphology	**% Pool**	**% Run**	**% Riffle**	**% Rapid**

Water Quality Characteristics

	Sample 1	**Sample 2**	**Sample 3**	**Sample 4**	**Sample 5**	**Average**
Temp (^{0}C)						
Conductivity (µS/cm)						
PH						
DO (mg/L)						
DO (% Sat)						
Clarity (cm)						
Colour						

Adjacent land use characteristics (tick all that apply)

- ☐ Native forest
- ☐ Exotic forest
- ☐ Farming
- ☐ Urban
- ☐ Mining
- ☐ Horticulture (market gardens)
- ☐ Road
- ☐ Stock (sheep/ cattle)
- ☐ Dairy
- ☐ Deer
- ☐ Horse
- ☐ Crops (e.g., animal feed or maize etc)
- ☐ Grazed (short)
- ☐ Grazed (long)

Bankside Visual Assessment of Substrate (%)

Bedrock	**Boulder**	**Large Cobble**	**Small Cobble**	**Gravel**	**Fine Gravel**	**Sand/silt**

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Substrate Characteristics

Method:
Either walking across the stream or in a zigzag pattern up or down stream in your study area, every two or three paces pick up the rock which is next to your left (or right) foot, drop this through the smallest hole in the gravelometer and record this in table 1.

(use the gravelometer image to help you locate the right square numbers)

Table 1

Gravelometer Square	1	2	3	4	5	6	7	8	9	10
>256mm										
180										
128										
90.5										
64										
45.3										
32										
22.6										
16.4										
11.13										
8										
5.6										
4										
2.8										
2										

Then, convert your tallies from Table 1 to the substrate category below. This will give the composition of you stream bed.

Table 2

Substrate category	Rock size	Tally	% of tally
Large cobble	128-256mm		
Small cobble	64-128mm		
Large gravel	32-64mm		
Small gravel	8-32mm		
Silt/sand	<8mm		
Large wood (>50mm)			
Small wood			

Periphyton (algae)

Method:
Pick 10 rocks at random – you can use some of the same rocks as you have collected for your substrate assessment.

List colour, type, and % of rock covered with algae.

Periphyton Group	Colour	1	2	3	4	5	6	7	8	9	10
Algae Mat											
Thin mat/film (<0.5mm)	*G*										
	LB										
	DB										
Medium mat (0.5 – 3mm)	*G*										
	LB										
	DB										
Thick mat (>3mm)	*G*										
	LB										
	DB										
Algae Filaments											
Short filament	*G*										
	BR										
Long filament	*G*										
	BR										
No periphyton (no colour and not slippery) (tick box)											
Sludge											
Present											
Percentage % cover											

Key

G = green *LB = light brown* *DB = dark brown/black* *BR = brown/reddish*

Aquatic Animal Assessment

Species	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Flat Mayfly					
Spiny Gill Mayfly					
Swimming Mayfly					
Tusked Mayfly					
Small Stonefly					
Large Stonefly					
Dobsonfly					
Uncased caddis					
Smooth cased caddis					
Woody cased caddis					
Stony cased caddis					
Horsehair worm					
Snail					
Other					
Koura					
Fish					

Habitat Survey – select the most appropriate description for these attributes

Excellent	Good	Fair	Poor
1. Amount of deposited fine sediment			
a) stony-bottomed streams			
<10% of the stream bed in run habitats covered by sand or silt	10-20% of stream bed in run habitats covered by sand or silt.	20-50% of stream bed in run habitats is covered by sand or silt, score lower if deposits are >1cm deep	>50% of the stream bed in run habitats is covered by sand or silt, score lower if deposits are >1cm deep
b) soft-bottomed streams			
Sediment deposits in pools <1 cm deep	Sediment depth is up to 10% of max pool depth	Sediment depth is 10-30% of max pool depth	Sediment depth is >30% of max pool depth
8 7	6 5	4 3	2 1 0
2. Habitat for aquatic animals			
Circle all habit features that are present:			
Large wood root mats undercut banks overhanging vegetation macrophytes boulders cobble			
Abundant and diverse At least 4 of these habitat features present AND Large particles (cobbles, wood, roots) cover >75% of stream bed	**Adequate** 3 of these habitat features present AND Large particles cover at least 50% of stream bed	**Patchy and limited** 2 of these habitat features present AND Large particles cover at least 25% of stream bed	**Rare or absent** One or none of these features present AND Large particles cover <25% of stream bed
8 7	6 5	4 3	2 1 0
3. Flow types			
Circle all flow types present:			
pool riffle run chute/waterfall			
All least 3 of these flow types are present AND Variety of pool sizes and depths	3 flow types present but riffle habitat is scarce AND Some deep pools	Only 2 flow types present AND Deep pools absent	Only 1 flow type present AND Pools absent (includes uniformly deep streams)
8 7	6 5	4 3	2 1 0
4. Bank stability and erosion - rate each bank separately			
High Banks have very stable rock/soil type and/or dense vegetation cover AND <5% of bank length eroded by scouring or trampling	**Moderate** Banks have fairly stable soil type and/or moderate vegetation cover and/or root depth AND 5-30% of bank length eroded by scouring or trampling	**Low** Banks have somewhat unstable (crumbly) soil and/or sparse vegetation cover and/or shallow roots AND 30-60% of bank length eroded by slumping or trampling	**Very low** Banks have very unstable soil and little/no vegetation and few roots AND >60% of banks length eroded by slumping or trampling
Left Bank			
4	3	2	1
Right bank			
4	3	2	1

Excellent	Good	Fair	Poor
5. Bank vegetation (up to 10m from stream) – rate each bank separately			
Mature native vegetation with intact understory and ground cover	Regenerating native bush or mature, with damaged understory or mature exotic trees, flaxes, sedges	Shrubs or sparse tree cover with little understory vegetation or long grasses or early-stage trees	Heavily grazed/mown grass or bare ground, or impervious artificial surfaces
Left Bank			
4	3	2	1
Right bank			
4	3	2	1
6. Riparian buffer width and intactness			
Continuous trees/shrubs along stream and no livestock access to stream AND wide (>10 m) buffer width	Trees/shrubs mostly continuous and livestock access limited AND moderate (5-10 m) buffer width	Fence only or patchy trees/shrubs with grazed/mown grass AND narrow (<5 m wide) buffer width	Few/no trees/shrubs and unlimited livestock access or obvious human impact AND absent or infrequent buffer width
Left Bank			
4	3	2	1
Right bank			
4	3	2	1
7. Shade			
High shading (>70%) across stream	Moderate shade (40-70%) of water surface	Minimal shade (10-40%) of water surface	Little or no shading (<10%) of water surface
8 7	6 5	4 3	2 1 0
8. Channel alteration			
Natural stream bed and unmodified bank form OR Stream with natural channel profile and meander	Natural stream bed, some evidence of bank stabilisation (e.g. near bridges). No embankments or man-made structures in stream OR <20% of channel straightened	Significant proportion or stream bed or banks stabilised by man-made material OR embankments keep floodwaters within the channel OR 20-50% of channel straightened	Stream bed or banks stabilised over most of their length by man-made materials OR stream flow altered by instream structures (weirs, culverts) OR >50% of channel length straightened
8 7	6 5	4 3	2 1 0
TOTAL SCORE =			
How to interpret your score			
Excellent > 55	**Good 40 - 55**	**Fair 24-39**	**Poor < 24**

Rubbish/litter Audit

	Excellent	Good	Fair	Poor
Amount of rubbish	On first glance, no rubbish visible; after close inspection little or no rubbish evident.	On first glance, little or no rubbish visible; after close inspection small amounts of rubbish evident.	Rubbish is evident in low to medium amounts on first glance. Streambank contains litter.	Rubbish distracts the eye on first glance. Substantial litter in stream and along bank.
Score	8 7	6 5	4 3	2 1
Threat to aquatic life	Rubbish, if any, mostly paper or wood products or other biodegradable materials.	Little or no persistent or buoyant rubbish or small items. Rubbish is mainly degradable, settleable or non-toxic, e.g. wood, glass, or metal.	Medium amount of persistent (e.g. plastic, rubber), toxic (e.g. cigarette butts), or buoyant (e.g. bags) items; or large deposits of settleable rubbish such as glass or metal.	Large amount of persistent (e.g. plastic, rubber), toxic (e.g. cigarette butts), buoyant (e.g. Styrofoam), or small rubbish items
	8 7	6 5	4 3	2 1
Threat to human health	No bacterial/viral hazards (medical waste, diapers, pet/human waste), no toxic substances (batteries, chemicals), no puncture or laceration hazards.	No medical waste or sources of toxic substances, but some puncture or laceration hazards (e.g. broken glass, metal debris).	Presence of **one** of the following: needles or medical waste; diapers or pet waste; toxic substances such as batteries or chemicals.	Presence of **more than one** of the following: needles or medical waste; diapers or pet waste; toxic substances such as batteries or chemicals.
	8 7	6 5	4 3	2 1
Dumping and littering	Any observed rubbish is incidental litter (less than 5 items) or carried downstream from another location.	Some evidence of instream or shoreline littering; and/or evidence of dumping of material. Material dumped is paper-based debris (e.g., fast food).	Prevalent instream or shoreline littering; and/or the presence of **one** large item (e.g., furniture, appliance, rubbish bag).	Significant littering; and/or evidence of repeated dumping, with **more than one** large item (e.g., furniture, shopping trolley, bags of rubbish).
	8 7	6 5	4 3	2 1
Accumulation of rubbish from upstream	Rubbish, if any, appears to have been directly deposited on the stream bed (no evidence of transport from upstream).	Less than 10 rubbish items. Items appear to be transported from upstream (based on evidence such as silt marks, faded colours or near high water mark).	10-50 items of rubbish items appear to be carried to the location from upstream, as evidence from location near high water mark or siltation marks.	Substantial quantities of rubbish (>50 items) appear to be carried from upstream and has accumulated at the site.
	8 7	6 5	4 3	2 1
Total Score = / 40				

Other comments/observations

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Site diagram