

Stream Health Check

FW2

Stream Name: _____

Date and Time: _____

Water temperature: _____

Notes on recent climatic conditions:

Notes on recent land use around waterway:

This assessment form is designed for landowners to assess critical aspects of their waterway as an indication of its current level of ecological health. Adding together the questions scores provides a total score ranging from 40 to 400. A score greater than 260 indicates a good stream while a score of less than 110 indicates there are aspects of your waterway that might be contributing to its low health.

Always ensure it is safe to go into the waterway. Where safe, this is a great activity to do with kids.

Choose representative sites of streams on your property where you know you will go back and repeat the assessment. The assessment should be done annually, but you can do it more frequently if you choose.

To use the form, read each question thoroughly and record the score which corresponds to the category best describing your stream (or the specific area of the stream you are assessing). Assess each section of stream 100m up-and-downstream of where you are standing. If your stream isn't described exactly by one category you can give it a score halfway between those given.

Try to assess the stream under low flow conditions so you can see the substrate, and things like periphyton slime have not been washed away. This is when most aquatic life is active. A number of our native fish for example tend to burrow into the sediment (if they can) and remain inactive over winter.

Developed by Dr. Russell Death, Massey University





Related waterway health risk

(see Table 2.1 Risks and management options) in Freshwater ecosystem health

Stream banks						
1.	What type of vegetation is along the banks and sides of the stream?	Trees with dense groundcover e.g. tussock, toetoe, ferns, flax, rushes. 16	Tall grasses with patchy trees and groundcover. 8	Patchy trees, groundcover grazed or absent. 4	Grazed pasture grasses to stream edge. 2	↓ A, D, E, F
2.	How continuous is the vegetation (other than pasture) along the stream banks?	Tall vegetation (over 3m)/trees continuous, or a few small gaps. 16	Tall vegetation (over 3m)/trees a few large gaps or several small gaps. 8	Breaks in tall vegetation (over 3m)/trees frequent and very patchy. 4	Many large gaps in tall vegetation (over 3m)/trees or no tall vegetation at all. 2	
3.	What is the average width of the vegetation (other than pasture) along the stream banks?	>30m 32	10-30m 16	1-10m 8	<1m 4	
4.	What percentage of the stream is shaded by plants and stream banks?	50% or more 16	30% 8	10% 4	Little or no shading. 2	B, F, I
5.	How stable are the stream banks?	Banks stable, rock and soil firmly held by grasses, shrubs and tree roots. 16	Banks firm but loosely held by grass and shrubs. 8	Banks of loose soil held by a patchy layer of grass and shrubs. 4	Banks unstable, loose soil or sand easily disturbed. 2	A, D, E
In-stream life						
6.	What is the level of algal (periphyton) growth? NB: this needs to be assessed in summer after at least two weeks of no flooding.	Stones rough to the touch. Scraping thumb nail over stones yields no slime. 32	Stones slippery to touch. Scraping thumb nail over stones yields no slime. 16	Stones very slippery to touch. Scraping thumb nail over stones yields a small amount of slime. 8	Thick layers of slimy algae. Scraping thumb nail over stones yields large volume of slime. 2	B, C, D
7.	Are there any natural obstructions to stream flow?	Rocks and old logs firmly set in place. 16	Rocks and logs backfilled with sediment. 8	Rocks and logs loose, move with floods. 4	No obstructions to slow the stream flow. 2	H
8.	What invertebrates (bugs) are present in the stream? NB: to find stream insects look under rocks. Or if the stream has no rocks look on water weeds, grass, logs and other debris. Use a sieve and white icecream container if needed. Use the ID chart provided in your resource.	Lots of mayflies, stoneflies and other types of crawling and swimming insects. 32	Moderate numbers of mayflies and caddisflies. Variety of other types of insect may also be found. 16	Very few crawling and swimming insects. Snails, worms and midges abundant. 4	Mostly snails, worms and midges. 2	A, B, C, D, E, F, G, H

See step 3 in the freshwater ecosystem health chapter for more information



Related waterway health risk

(see Table 2.1 Risks and management options) in Freshwater ecosystem health

Potential for contaminants						
9.	Do stock have access to your stream?	Stock do not have access to any of the stream or its banks. 32	Stock only have access to a small part of the stream. 16	Stock have access to most of the stream. 8	Stock have access to the entire stream. 4	A, B, C, D, E
10.	What is the potential for the input of sediment to your stream? (e.g. from stream banks, stock damage/trampling, stock crossings, surface runoff, runoff from farm roads, slips/erosion, etc).	No potential. 32	Low potential. 16	Moderate potential. 8	High potential. 4	A, B, D, E
11.	What is the potential for the input of contaminants to your stream? (e.g. from spray drift, sprayer washings sheep dips, effluent ponds, silage pits, dumps, oil and foam, dead animals, etc).	No potential. 32	Low potential. 16	Moderate potential. 8	High potential. 4	G
12.	Are there any artificial drainage, Critical Source Areas (CSA's) or overland flow pathways where runoff enters the stream? (e.g. gullies, depressions, swales on adjoining land)	No CSA's or overland flow pathways within 100m. 16	One CSA or overland flow pathway within 100m. 8	2-3 CSA's or overland flow pathways within 100m. 4	Greater than 3 CSA's or overland flow pathways within 100m. 2	A, B, C, D, E
13.	How much nitrogen and phosphorus fertiliser do you use annually?	None 32	Less than 150kg/ha super or equivalent, no nitrogen fertiliser. 16	150-300kg/ha super or equivalent, less than 50kgN/ha. 8	More than 300kg super or equivalent, greater than 50kgN/ha. 4	A, B, C, D
Stream channel						
14.*	What is on the streambed?	Rocks and stones of different sizes, tightly packed together. 16	Stones, silt present in gaps between rocks/stones. 8	Gravel, sand and silt. 4	Sand and silt, stones absent. 2	A, D, E

If your stream is naturally soft bottomed you can skip questions 14* and 15*.



Related waterway health risk

(see Table 2.1 Risks and management options) in Freshwater ecosystem health

15.*	If you stand in the stream and dig your feet into the substrate what does the water quality do?	Remain clear. 32	Clear quickly. 16	Remain murky for less than 1 minute. 8	Remain murky. 4	A, D, E
16.	How cohesive are the soils of the stream bank?	Very cohesive. Mostly rock and cemented material (boulders and bedrock). 16	Moderately cohesive. Tightly packed gravel or sand in a clay matrix. 8	Loose soils with fine aggregates. Tightly packed sands or gravel with some silt or clay. 4	Very loose soils. Loosely packed sand, gravel or pumice material. 2	
17.	How well do your soils drain after rain?	Deep, well-drained soils that slow down the flow of water to waterways and drains. 16	Moderately well-drained soils, with some waterlogging for periods in winter where runoff poses a risk to waterway. 8	Excessively well-drained soils where water moves freely and rapidly through the soil into underground aquifer likely connected to waterway. 4	Poorly drained soils where water-logging and surface-ponding occurs where runoff a risk to waterway. 2	
<p>TOTAL (add up each of your scores to generate a total)</p> <div style="border: 1px solid black; width: 200px; height: 30px; margin-left: auto;"></div>						

What does my total score mean?

- **More than 260:** Great! Your stream is very healthy and hence has low priority for waterway management. It provides important fish and wildlife habitat and clean water for downstream users.
- **110 – 260:** Your stream has lots of potential and is at in an intermediate level of health. But there are clearly some aspects of your waterway that need attention. Identify risk factors from your results.
- **Less than 110:** Your stream has been adversely affected by activities on your farm or upstream in the catchment. Identify risk factors from your results.

Identifying risk factors from your results

The final column has letters A-I which link with a list of risks to ecosystem health and factors that may be impacting on these (Table 2.1 in the Freshwater Chapter Resource).

Look for the questions where you answered 2 or 4 and take note of the letter (A-I) in the final column and refer to Table 2.1 to identify possible factors contributing to existing ecosystem health challenges and some possible management options. Work through this and the risk matrix in Step 4 to help you identify appropriate actions to enhance freshwater ecosystem health on your farm addressing the areas of greatest risk first.