

Freshwater Discovery



- 1. Name of your school** = Hurupaki Primary School
- 2. Name of the waterway** = Otepapa Stream – tributary of the Waitaua Catchment
- 3. Date of stream study and recent conditions:** 08/04/11. Sunny day with warm breeze. A few showers over last few days.
- 4. Location of stream study** = Hodges park - Kamo

5. Clarity

Measure the clarity of the water. Write the answer in the space below:

Clarity = 100 cm +!
After we had been in the stream = 38 cm!.

A clarity of more than 70cm is okay. A clarity of more than 100cm is good.

6. Water Temperature

Test the water temperature using the thermometer. Write the answer in the space below:

Water Temperature reading = 15 degrees celcius

7. Water Flow

- Measure the flow of the stream. Write the answer in the space below:

Time = 19 seconds

Distance = 5 metres

A velocity (flow rate) of 0.3-0.7 m/s is best for most stream life.

8. pH

pH was measured at 6 which means that the stream is high in nutrients – this may be from lots of

nutrients washing into the stream including from all the dog poo lying around!

9. Thinking about changes

Main landuse?

Recreation – walking, dog walking
Residential

Are the plants shading and protecting the stream – are there enough riparian plants?

YES – although there could be more up above the bridge

What types of pollutants could be getting into this stream and how?

Type of pollutant	How is it getting into the stream?
Stormwater	Drains
Dog Poo	Dog owners walking their dogs
Rubbish and glass	Further upstream or people chucking glass bottles in the stream.

Do you think it's safe to get into this stream? Why?

Yes as long as we sanitise our hands before eating and drinking and wear shoes in the stream.

Invertebrate Life

If it is safe to get into the water collect up to five samples. Always move upstream as you go and take good care of your bugs! Try to sort and identify your bugs using the “Waicare Invertebrate Field Guide – Invertebrate Identification’ front pages. Begin to fill in the table below if you can:

Species:	Tally:	Sensitivity Score:
Freshwater pointed snail	51	3
Freshwater Crayfish	26	5
Worm	15	1
Swimming mayfly	51	9
Spiny gilled mayfly	1	9
Stonefly	12	5
Free-living caddisfly	3	5
Dobsonfly	12	7
Damselfly	1	5
Backswimmer	2	5
Isopods	5	5
Freshwater Mussel	1	3
Water Boatman	2	5
Stony-cased Caddisfly	2	9
Cranefly Larvae	1	5
Leech	1	3

9. Fish and Eels

Check the traps with Kim and record what you find in the table below:

Species:	Size:	Tally:
None sighted. No traps set		

10. Putting it all together...

Add all of your sensitivity scores together and divide that number by the number of different species you found. This will give you a health rating. Write your calculation below...

$3+5+1+9+9+5+5+7+5+5+5+3+5+9+5+3=84$
 $84/16=5.25$

Thinking about your health score for the stream and everything else you saw and experienced at the stream, how healthy do you think the study site is? Write your decision as a rating out of ten in the space below...

8/10. Considering that we found a wide range of life and most of things we found were quite high scoring creatures we can assume that the stream is quite healthy. There is lots of vegetation around but further upstream there is an area where it is not planted and the sun is getting on the water – I think this is why the water temperature was higher than expected.

Brainstorm ideas you have on how the quality of the habitat for the invertebrates and water in the stream could be improved...write your ideas below...

Plant low species like flaxes, RengaRenga lilies, Carex and sedges upstream from the historic bridge.

Clean the rubbish out of the stream.

Keep monitoring the site

Ask the council to install dog poo bins in the park.

Summarise (with art, story or drama, maths – whatever works!) what we found out about the stream and how we can look after it and share it with the rest of the school and the wider community so they can get excited about our waterway too and help to look after it.