



**Whangarei Primary School Extension Class  
Drains to Harbour  
Waiarohia Stream Experience**

DTH – Camellia Neilson



**We arrived onsite after our short walk from school where we were welcomed and briefed 😊**



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**Kim told us about how to keep safe and what the plan was for the day...**



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**Kim's holding a pest weed called, 'Parrot's Feather'. We needed to make sure we didn't transport it to another waterway on our shoes!**





**We also had out stream study boundaries pointed out – can you see the cone?**





**We had a look at what Kim and Camellia had got out of the fish traps...can you see the pest fish called Gambusia?**





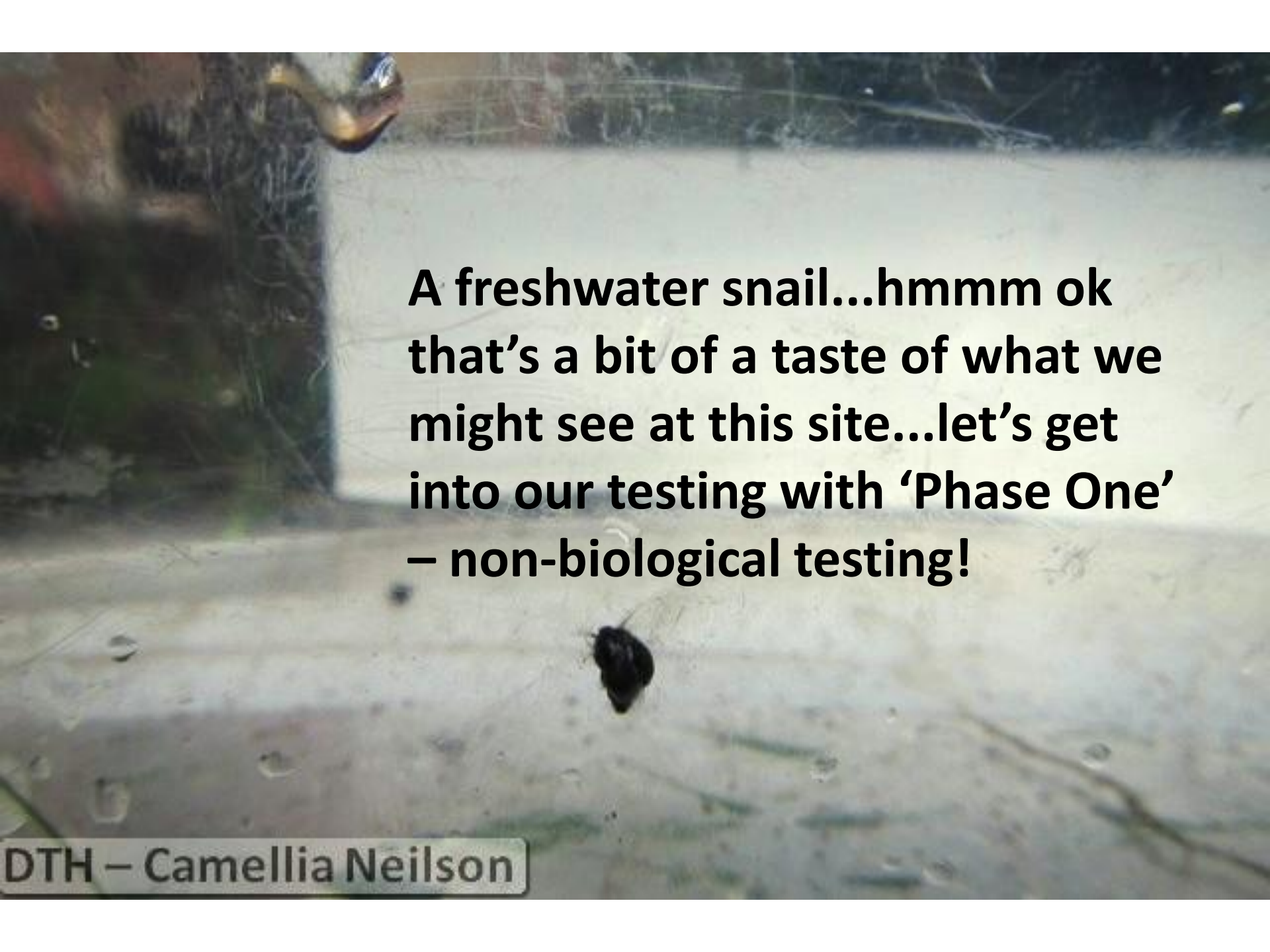
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**Can you see the freshwater crab?**



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**A freshwater snail...hmmm ok  
that's a bit of a taste of what we  
might see at this site...let's get  
into our testing with 'Phase One'  
– non-biological testing!**



**We took a water sample and poured it into the clarity tube...**



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We all had a look through the tube...

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...and decided the clarity was  
86 cm – that's really good –  
especially after recent rain

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**Then we dipped some indicator paper in the water for three seconds...**



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...and decided the pH was 6.5 – that's slightly acidic but OK





**We had a look at our rubber ducky thermometer...**



**...it says the water is 14 degrees celcius – that's pretty good for most stream life**



# Time to measure the flow!





Here it comes...



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**A Velocity (flow rate) of 0.5 m/s – that's pretty good for most stream life too**



**Right it's time for  
'Phase Two' – habitat  
assessment...!**

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**We got into four groups...here's one of them 😊**



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**And used the handout to assess what type of habitat we were working in...**



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**By thinking about things like if there was any erosion on the streamside, how much vegetation there was and what the microhabitats were like...**





# Another group assessing the habitat 😊





**After a quick bite to eat it was time to move into 'Phase Three' – the most fun phase of all – sampling for the macroinvertebrates!**

**We filled our buckets and bug sorting trays with water so we could keep all our findings alive...**





**We worked in our groups under the helpful watchful eyes of our group parent leaders**



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**That's called  
doing a 'kick  
sample' – great  
technique there  
girls!**





**Here's some  
pictures of us  
exploring our  
local freshwater  
environment...**



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**Righteo – time to have a look at what we found and  
look at what ‘sensitivity score’ our bugs get!**



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**Could it be...yes it's a Stonefly! That type of Stonefly gets a score of 5**



**Rounded freshwater  
Snails – they get a  
score of 3**





A close-up photograph of several snail eggs. The eggs are small, oval-shaped, and have a translucent, slightly iridescent appearance. They are clustered together on a dark, textured surface that appears to be covered in moss or lichen. The background is blurred, showing some green foliage and a reddish-brown vertical element, possibly a tree trunk or branch.

**Snail eggs! They don't  
get a score but they are  
interesting to look at 😊**

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**A freshwater shrimp –  
they get a score of 5**



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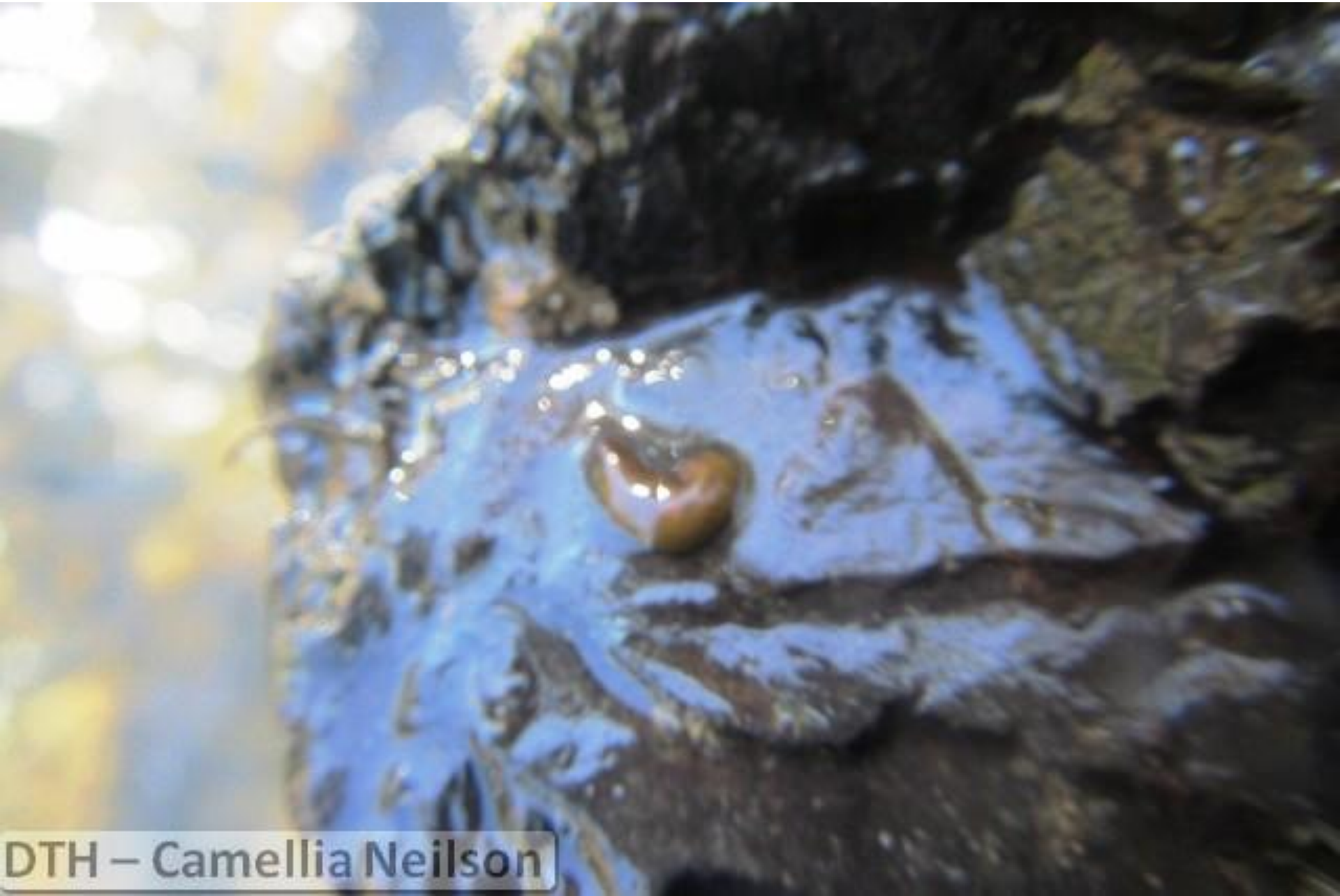
**A Worm – they get a  
score of 1**



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# A flatworm – they get a score of 3





**A Common Bully!! Yay  
we found a native fish 😊  
They don't get a score as  
they will just swim away  
if they don't like the  
stream...**



**A juvenile (baby) Eel!!  
Yay we found another  
native fish 😊 Remember  
they don't get a score as  
they will just swim away  
if they don't like the  
stream...I wonder if this  
little one will make his  
home here or keep  
swimming upstream...**



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**Wow hard to tell from this angle but I think...**



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**Yup it's a  
Damselfly – they  
get a score of 5**



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**We found lots of  
Water Boatman –  
they get a score of 5**



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**What a beautiful specimen – that’s a Dobsonfly (AKA ‘Toebiter’) – they get a score of 7!**



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**Sadly we also found lots of things that didn't belong there...**



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**Can you figure out where each item of rubbish came from and where it would have ended up if we hadn't picked it up?**



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**Our field trip is coming to an end...**



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**Time to share what we found so all the data can be recorded**

**Click to the next slide to see a summary of what we found...**

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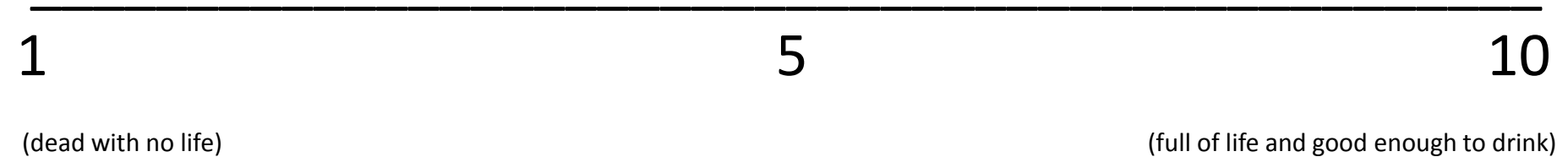


Test	Result	What this means
Clarity	86cm	Good
pH	6.5	Good but slightly acidic
Temperature	14 degrees Celcius	Good
Flow	0.5 secs/m	Good
<b>Habitat Assessment</b>	Good but could do with more shade and less bank erosion	
<b>Macroinvertebrate sampling:</b>	3.9 – that’s just OK	
Leech and Flatworms	11	3
Dobsonfly	1	7
Freshwater Crab	1	5
Damselfly Larvae	1	5
Stonefly	5	5
Isopods	2	5
Shrimps	3	5
Water Boatman	32	5
Rounded Snails	42	3
Worms	1	1
<b>Fish Present:</b>		
Eel	One small (10 cm long)	Great
Common Bully	One small (5 cm long)	Good
Mosquitofish	5	Not good



# What's next?

**1. Think about the living things as well as the non-living things e.g. Temperature, clarity, habitat and life that you found during you stream study. Based on this, how would you rate the general health of this waterway? Decide on a rating between 1 and 10.**



**2. Give an explanation on your rating**

**3. What are the things that you think threaten water quality most in your catchment? e.g. Runoff from cars on roads, farming runoff, lack of shade from riparian vegetation etc.**

**3. How could the water quality in your catchment be improved? e.g. More streamside plants, less pollutants getting into streams etc.**



**OK now it's time to put this information into action. Use the template on the next slide to make an action plan. Remember to make it realistic – something you can really achieve as individuals or as a group – set yourselves up for success 😊.**

**Some hints and tips for taking action:**

- 1. Use the winds of change**
- 2. People are happiness seekers**
- 3. People copy each other**
- 4. People want to be good.**

*More details on these points in the attached pdf 😊*



# Environmental Action Planner

What's the issue?	
What's our goal?	
What skills will we need?	Who could influence the decision?  Who makes the final decision?
<b>ACTION</b> What are we going to do?	
Evaluation of action	Evaluation of plan
How will we find out what people think and feel about the issue?	How can we make people more aware of this issue?
What information do we need and where will we find it?	