

A photograph of a stream with green grass and brown leaves on the banks. The water is dark and still, reflecting the surrounding vegetation. The text is overlaid on the top half of the image.

Mangere Catchment Group Mangere River stream health investigation Field Trip

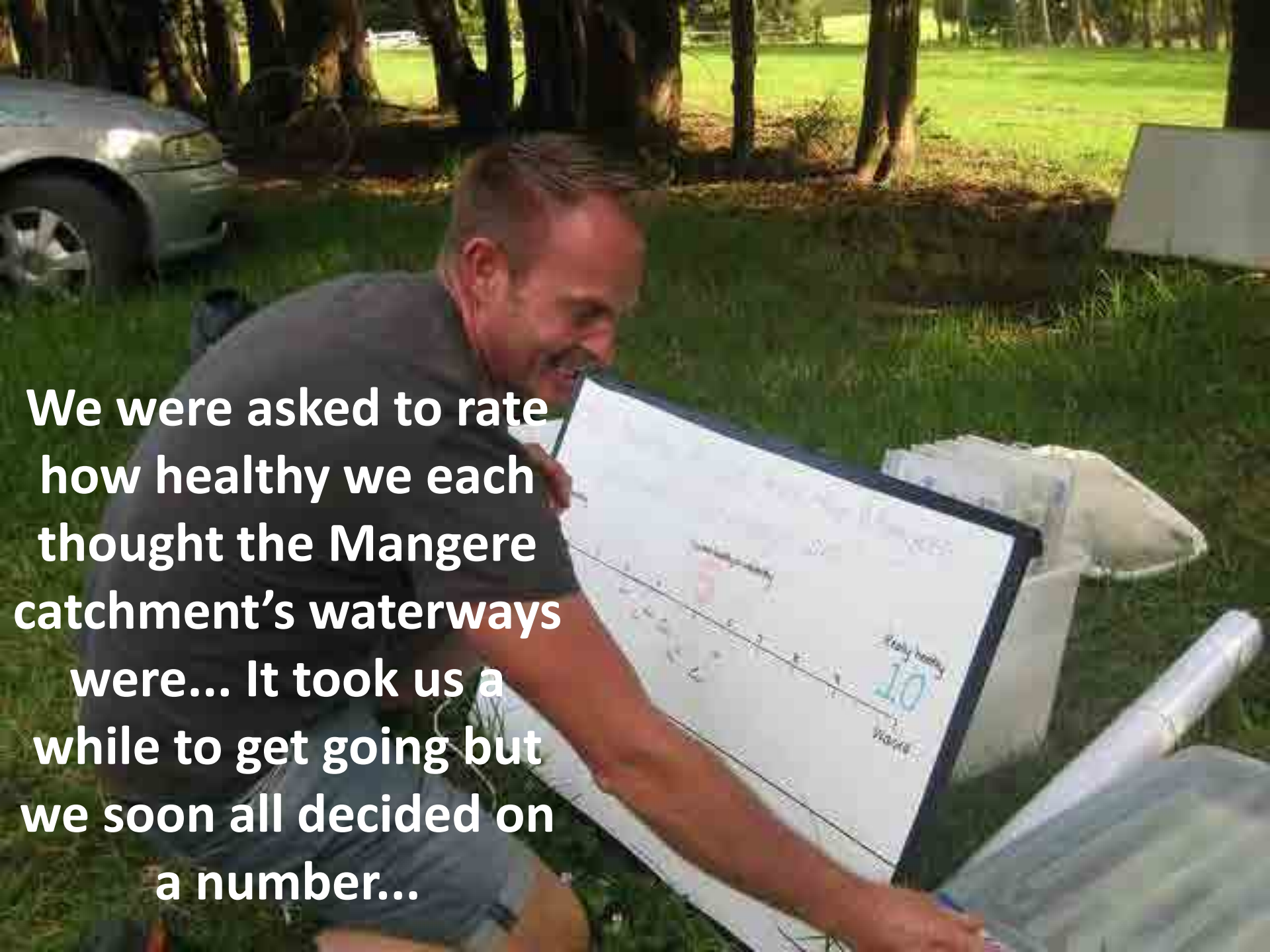
**Collated and narrated by
Kim Jones – Whitebait
Connection.
Photos by Susan Karels
from NRC - Enviroschools**

**We gathered around at the Kara Rd stream site
and Kim briefed us while we gobbled down a
quick bite to eat.**



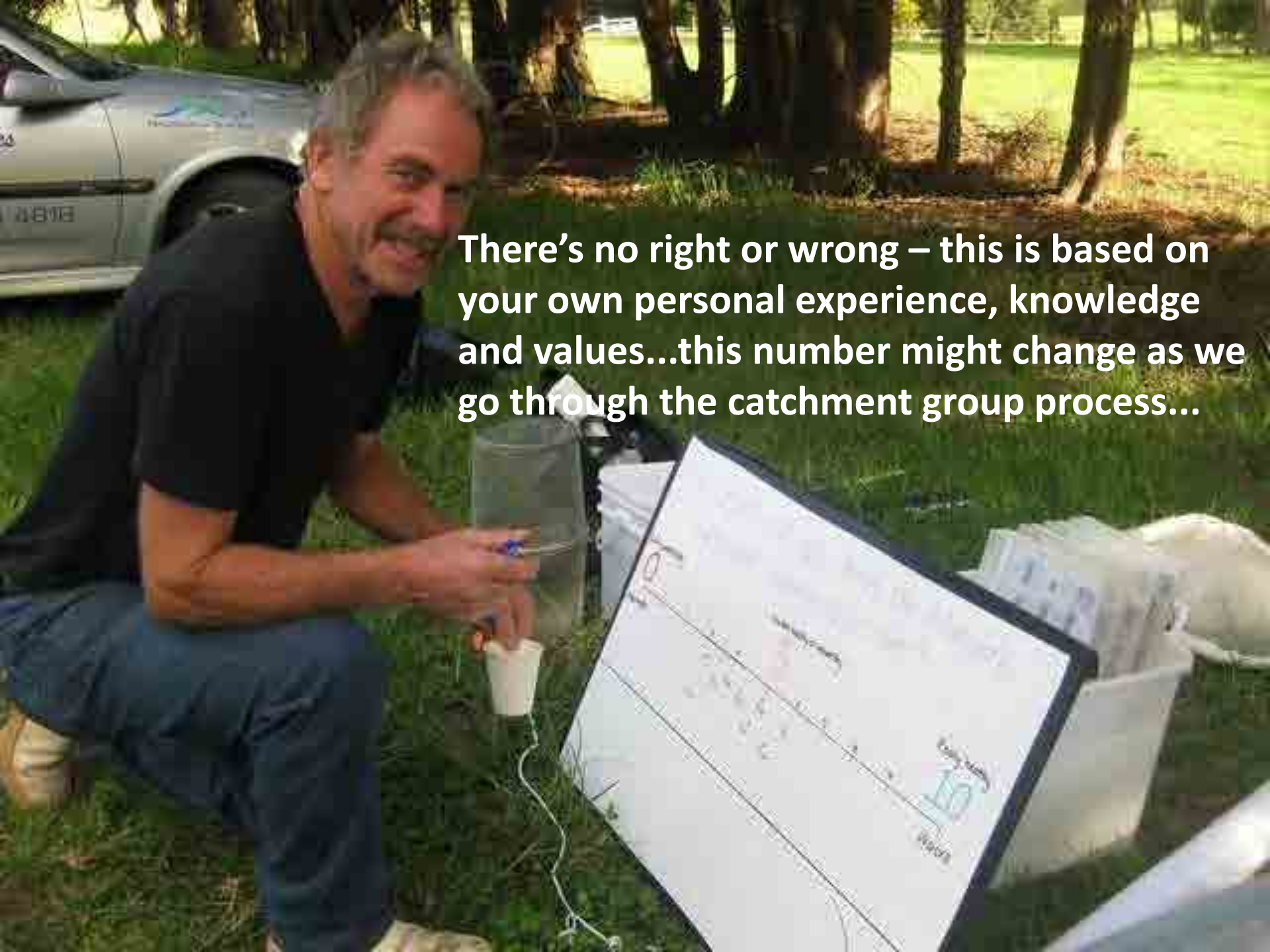
We heard the plan for the afternoon, starting at this small tributary high up in the catchment and finishing further down in the Mangere River downstream of the Falls.





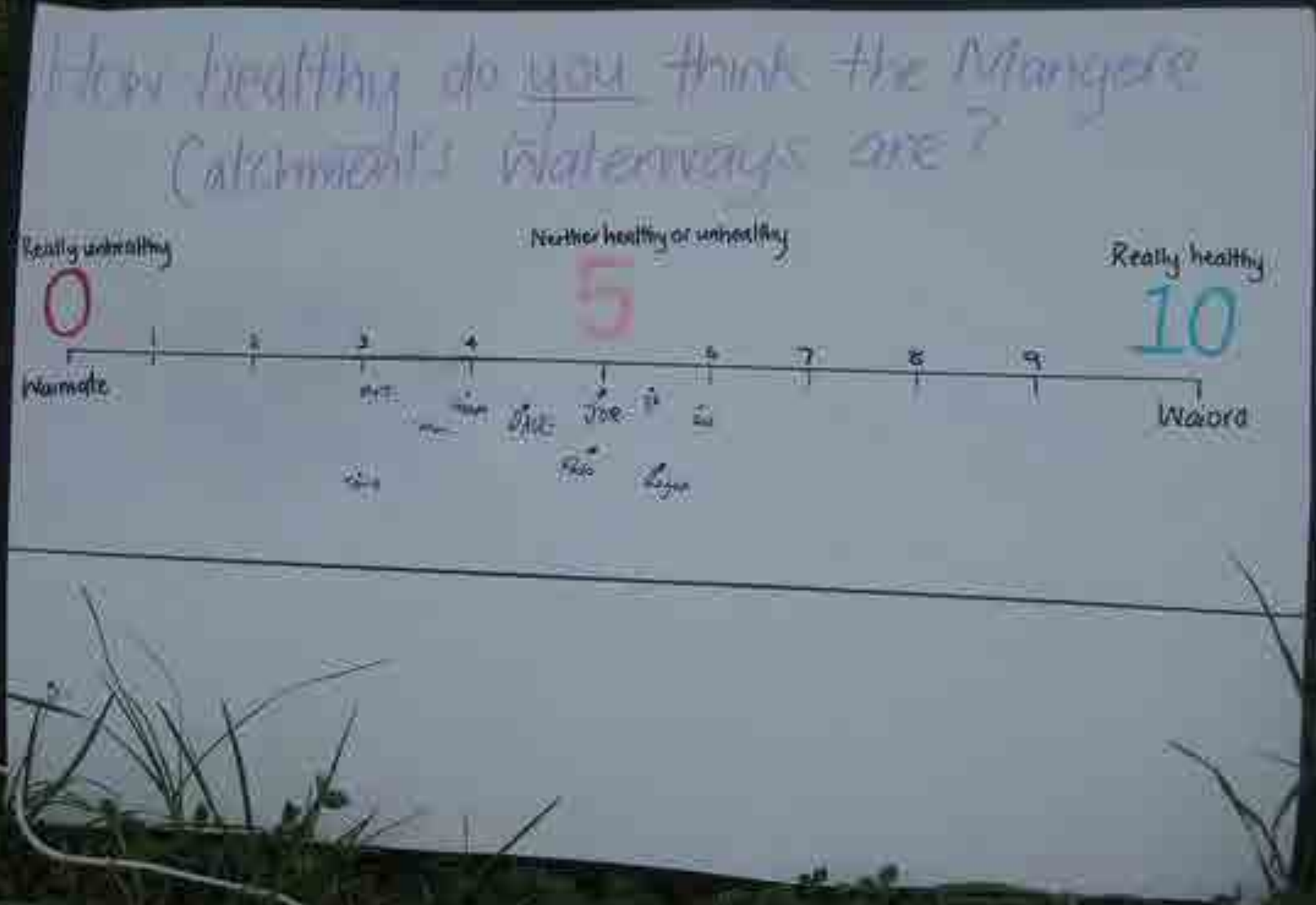
**We were asked to rate
how healthy we each
thought the Mangere
catchment's waterways
were... It took us a
while to get going but
we soon all decided on
a number...**



A man with grey hair and a mustache, wearing a black t-shirt and blue jeans, is kneeling on grass. He is holding a small white cup and a blue object. To his right is a large whiteboard with handwritten text and a logo. Behind him is a large clear plastic water bottle. In the background, there is a silver car and a line of trees.

There's no right or wrong – this is based on your own personal experience, knowledge and values...this number might change as we go through the catchment group process...

Hmmmm.....it's good to keep reflecting back on this and noting down why and if there are any changes in your number or if you think the number should be higher or lower and how you think that could happen...



**Right now we've got that
out of the way ...let's
check the fish traps!**



Hmmm what have we got
here...



Our first trap produced a nice catch!



A photograph of a pond with green lily pads and a brown log. A large, dark brown crayfish is on the log, and a smaller, brown fish is swimming nearby. The water is clear and blue.

A Kewai / Freshwater
Crayfish and a Common
Bully



Kim explained what the creatures were and what they tell us about water quality

Bully are found throughout the catchment as they don't need to go to the sea to complete their lifecycle (so barriers such as dams don't cause an issue for them). Finding freshwater fish like this is good as it tells us that the habitat is fairly good – fish need food, oxygen, cool temperature and fairly good water quality to live in



This is what Kim's face does when you ask her about Trout's effects on native freshwater fish like Bullies and Whitebait..eek... Trout do compete with Bullies and Whitebait for space and food and also eat them.






**Time to check some more
fish traps...**

We found lots more Bullies and Woody-cased Caddisflies that were enjoying hanging out on the hard substrate that the gee minnow fish traps were providing!



A group of about ten people, mostly men, are standing in a grassy field near a body of water. They are dressed in casual outdoor clothing like t-shirts, shorts, and boots. In the foreground, a woman in a black t-shirt and dark pants is standing by the water's edge, holding a long rope that leads to a fish trap. The background features a line of trees and a bright sky. The text is overlaid on the bottom left of the image.

We learnt that the fish traps are created to catch the surface feeding fish (e.g. Kokopu) without using bait but they also do a great job of catching many other things!



**We looked at the habitat and learnt how to
categorise it using the WaiCare invertebrate
field guide habitat assessment key**

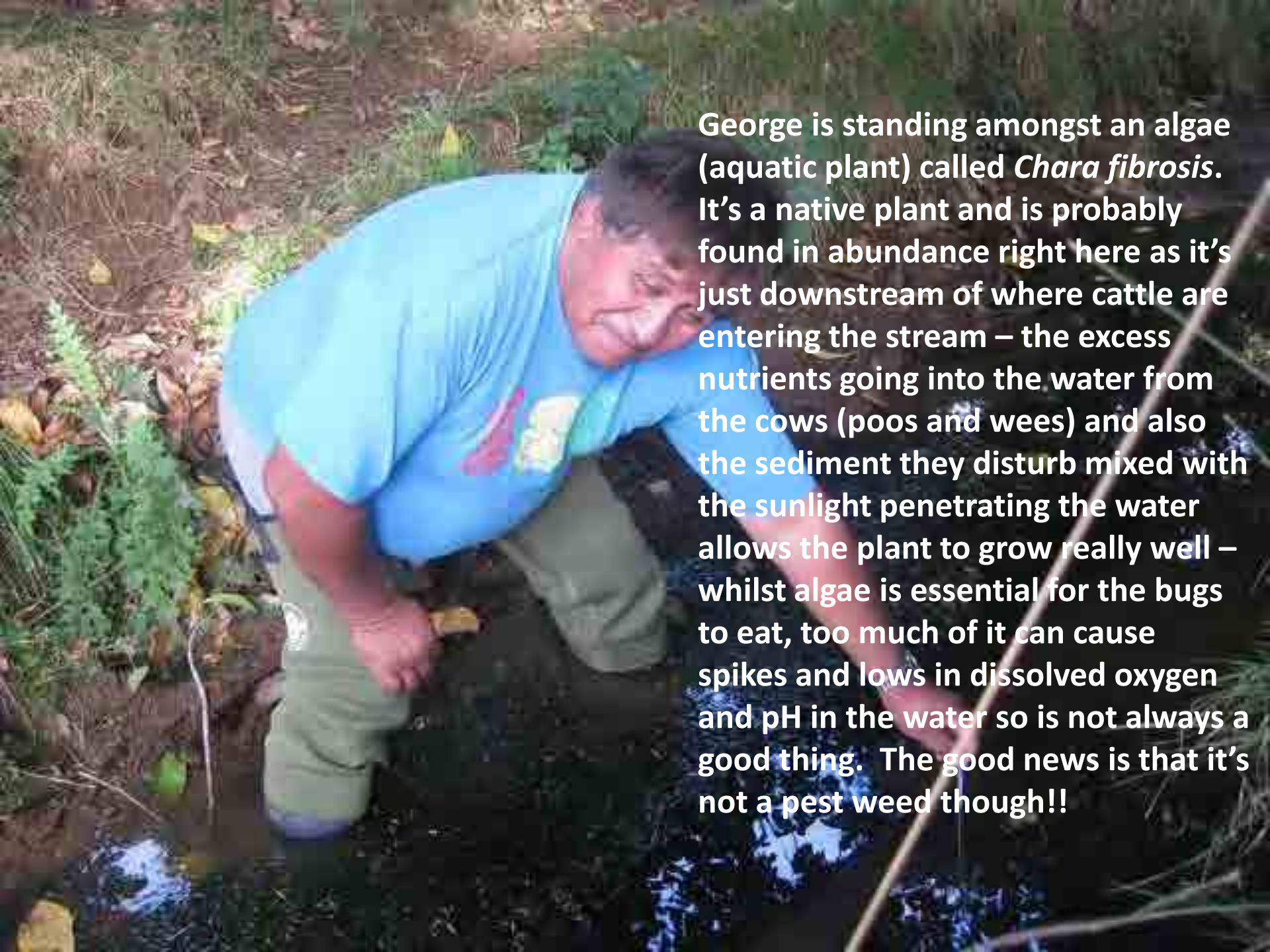


Each group member will get one of these guides to keep




Then we did some water quality tests...



A man with dark hair, wearing a light blue t-shirt and green waders, is standing in a shallow stream. He is leaning forward, looking down at the water. The stream is filled with a dense growth of green, leafy aquatic plants, identified as Chara fibrosis. The background shows a grassy bank with some fallen leaves. The text is overlaid on the right side of the image.

George is standing amongst an algae (aquatic plant) called *Chara fibrosis*. It's a native plant and is probably found in abundance right here as it's just downstream of where cattle are entering the stream – the excess nutrients going into the water from the cows (poos and wees) and also the sediment they disturb mixed with the sunlight penetrating the water allows the plant to grow really well – whilst algae is essential for the bugs to eat, too much of it can cause spikes and lows in dissolved oxygen and pH in the water so is not always a good thing. The good news is that it's not a pest weed though!!

A photograph of two people in a stream. A man in a brown jacket and glasses is standing on the right, holding a stick. A woman in a blue shirt is crouching on the left. The stream is surrounded by grass and trees. A fence is visible in the background.

The temperature
was 16 degrees
celcius at this site –
that's really good 😊

George hunts for some Eels...one was spotted!



Testing water clarity...



...we got 91cm at this site – that's fantastic!



So many Bullies – every trap was full







We also tested ph which was 7 (neutral) and conductivity which was 130 micro siemens which is also good.

A group of seven people are standing in a grassy field with large trees in the background. In the foreground, there are several white and blue plastic storage bins. The people are dressed in casual outdoor clothing, including t-shirts, shorts, and boots. One man on the right is wearing a dark vest over a light shirt. The scene appears to be a field study or a community activity.

Right so what does that all mean..?



Well it means that the
water quality tests we
have done are showing
that water quality is pretty
good here



Now let's see if the
macroinvertebrates tell us the
same thing ...

**We netted for
macroinvertebrates (bugs)
and identified them to see if
they were sensitive species
or not**



**Here's some pictures
of us discovering what
was wriggling around
in our buckets**

















We found a range of life (biodiversity) – some high scoring and some mid-range and some low which is good and what we would hope to see in a shaded stream site like this with a stony bottom and diverse microhabitats...

**Checking the fish traps
at the Knights Rd
site...**









**Lots more Bullies –
still no Kokopu –
hmmm should we try
to put the kokopu
back in Kokopu??**






There was a Dragonfly Nymph in the trap too – they get a score of 6





A photograph taken at night showing three people outdoors. A woman in the foreground, wearing a black t-shirt, holds a small petri dish containing a freshwater mussel. Behind her, a man in a light-colored button-down shirt looks on. To the right, a young boy is partially visible, also looking towards the mussel. The background is dark with some trees and a white structure visible in the distance. The scene is illuminated by a bright light source, likely a flashlight or camera flash.

**Freshwater Mussel
at site two – they
get a score of 6**

**Some quick testing
before the sun went
down!**



At this site we found that the water quality was more degraded despite the surrounding and instream habitat being very similar







**We also found pest
weeds at this site –
Curly pondweed.**





The Results....

Habitat Assessment

	Site One	Site Two
Watercourse Type	Stream	Stream
Catchment Landuse	Bush/pasture	Bush/pasture
General substrate	Muddy, gravelly and sandy	Muddy, gravelly and sandy
Microhabitat	Mud scrape, macrophytes, root systems, woody debris, stones	Mud scrape, open water, macrophytes, root systems, woody debris, stones
Shade	Some trees/some shade	Some trees/some shade
Current	Slow	Slow
Bank Stability	Some erosion	Some erosion

The habitats were very similar and in the same catchment so the sites are interesting to compare

Water Quality Tests

	Site one	Site two
Conductivity	130	170
Temperature	16	18
pH	7	6.5
Clarity	91cm	62cm

There was a significant decrease in water quality at Site Two especially in terms of conductivity, temperature and clarity

Macroinvertebrate Community Index (MCI)

	Site One	Site Two
Macroinvertebrates Score	5 - Water Fleas	7 - Freshwater Mussel
	3 – Snails	6 – Dragonfly
	5 – Freshwater Crayfish	5 – Water Boatman
	5 – Woody-cased Caddisfly	5 – Woody-cased Caddisfly
	5 - Free-living Caddisfly	
	1 – Oligochaete Worm	
	3 - Sandfly Larvae	
	5 – Crane fly Larvae	
	7 – Dobsonfly	
	8 – Flat Mayflies	

More biodiversity at Site One and the presence of higher scoring bugs gives us a higher overall score for Site One.

PS – Helen Moody’s group won the macroinvertebrate ID challenge – Kim will get the drink bottles to you all along with the invertebrate field guides at the next meeting 😊

In summary... The Mangere River still seems to have plenty of life and Mauri (life force) but the water quality at Site One was a lot better than Site Two. Both sites have room for improvement if that is the goal. As we didn't do the full suite of tests and didn't do fair comparative tests (e.g. less time spent at site two and in diminishing light) it is difficult to put an exact number on the health of the waterways but Kim's gut feeling, based on what she saw, is that the Kara Rd site is about a 8/10 and the Knights Rd site is about 5/10.

The Kara Rd site would be a lot easier to improve than the Knights Rd site as it has very little influence from upstream (mostly bush) and would really just involve some fencing and planting in situ, whereas the Knights Rd site water flows through a lot of farmed land which is fairly unshaded and unfenced before it even gets to site two, so it would definitely need to be more of a catchment approach if the goal was to improve water quality at this site.

Regarding the issue of no Kokopu in Kokopu!! If fish migration was aided by the installation of fish ladders at barriers then this would benefit both sites – not to mention the whole wider catchment area.

Kim can come in and do a presentation on the Whitebait lifecycle, mountains to sea food chain links and habitat requirements if the group would find it beneficial.

Lastly – a HUGE thank you to the landowners for opening your doors so warmly to let this experience and kaupapa happen. Learning based on real hands-on experience is the best kind and will help shape the journey that the Mangere Catchment Group is on to secure the future health of the Mangere catchment. Mauri ora.

