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Our field trip...

Kaikohe Christian School
Stream Investigation

Finding the treasure!

Can you find
the waterway
that we
investigated?

The
Taikawhena
Stream is a
tributary of the
Wairoro
Stream.



It flows from the direction of Ngawha Springs so it is probably influenced by the geothermal field of that area.



It's Thursday June the 13. We've got our gumboots on and we're crossing the Northland College field on our walk to the College farm. We're going on our field trip to investigate the Taikawhena Stream. Each group has some of the stream gear to carry.



Mr Alexander, the farm teacher for Northland College, meets us by the old milking shed and tells us about the farm. Usually there are lots of dairy cows in the paddocks but at the moment they are on another farm where they can eat lots of grass before they come back to the college farm and have their calves in July.

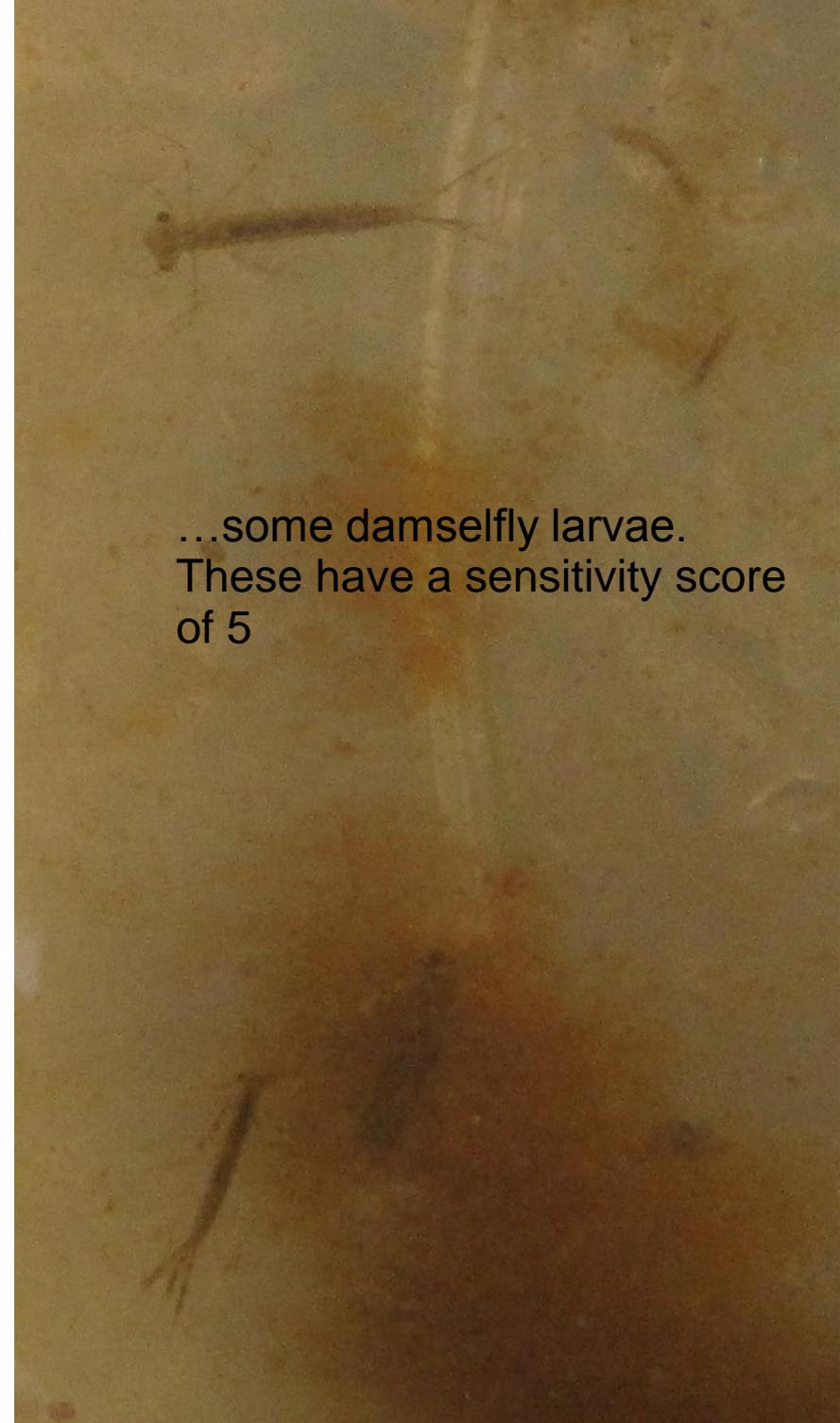


Mr Alexander also tells us about the fencing and planting that the college students have done along the sides of the stream. By keeping the cows away from the water and planting natives, they are helping to keep the water clean by filtering mud and nutrients out before the rainwater flows to the stream.

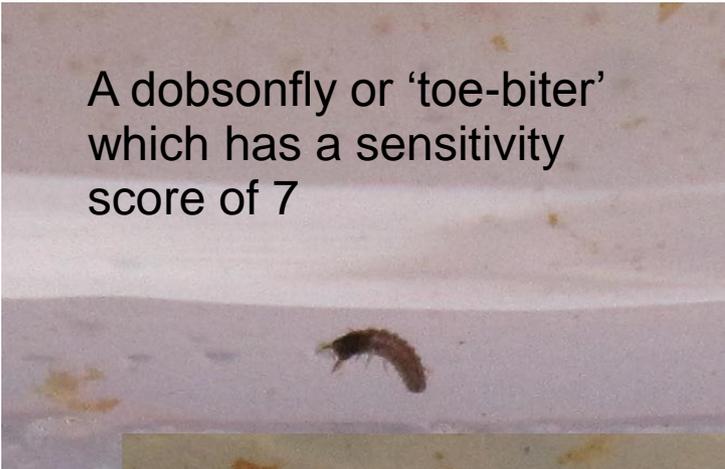




It doesn't take long to walk to the first site. This is a very slow-flowing creek – not much more than a farm drain. Earlier today our Whitebait Connection co-ordinator, Whaea Soozee, had retrieved the traps that she set the night before. The water is quite murky and it's hard to see some of the critters in the basin. The traps had caught...



...some damselfly larvae.
These have a sensitivity score
of 5



A dobsonfly or 'toe-biter'
which has a sensitivity
score of 7



and a beetle –
sensitivity score 6

These are high-scoring critters to find in such murky water! Last year when the Kaikohe East School children visited this site there weren't so many invertebrates so maybe the water quality has improved!



We use the clarity tube to see how clear the water is. It's only about 30cm, which is not very clear. The temperature is 11 degrees Celsius – already 2 degrees warmer than when Whaea Soozee checked it earlier in the day. The sun must be warming this unshaded waterway!



We carry on across another paddock to reach the main investigation site



We have to cross a boggy area by walking along a plank, then we are amongst the tall totara trees that shade the stream.



In the traps that our Whitebait Coordinator, Whaea Soozee, retrieved earlier were a common bully fish and some woody-cased caddis-fly larvae.

We use the scoop nets to find more critters which we put into basins. We sort them into trays, being careful not to hurt them, then we identify the critters and check out their sensitivity scores to see what they tell us about the health of the stream.



Spiny gill mayfly. 9



Dragonfly. 6



Gambusia – an introduced 'pest' fish.



Water boatman. 5

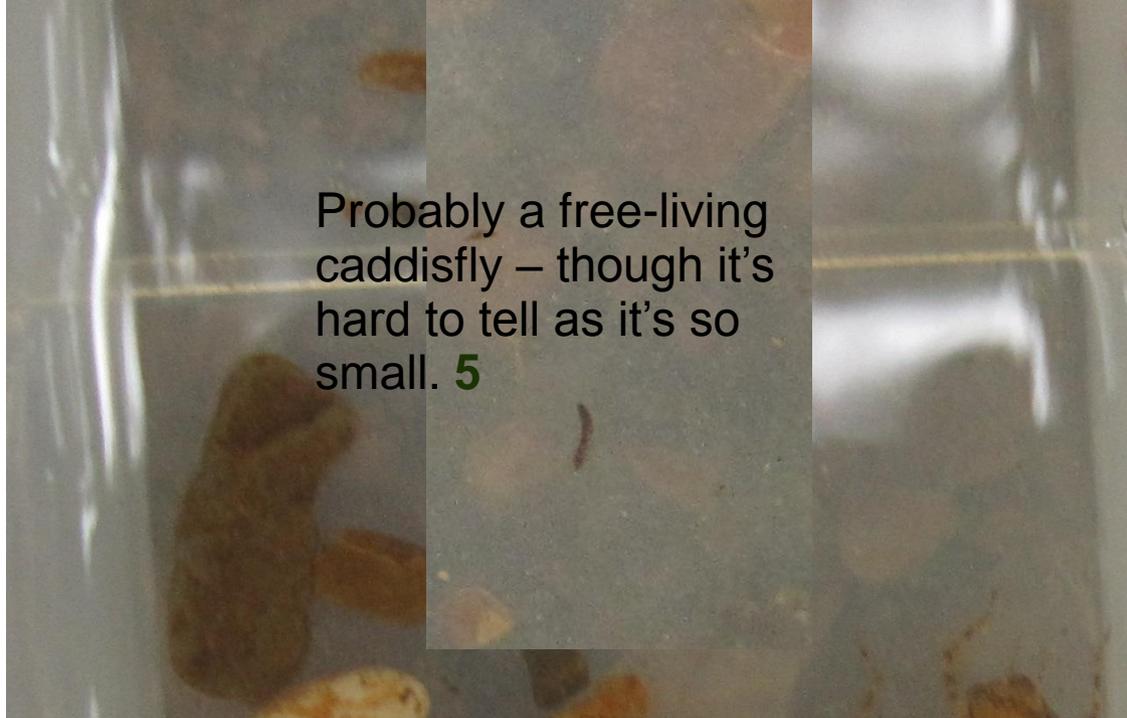


Woody-cased caddisfly. 5



Bully fish – probably a common bully.

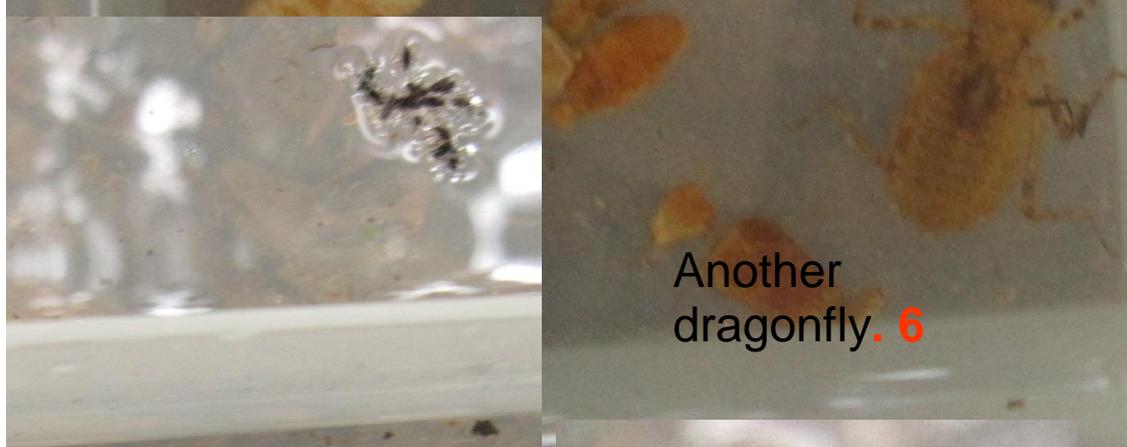




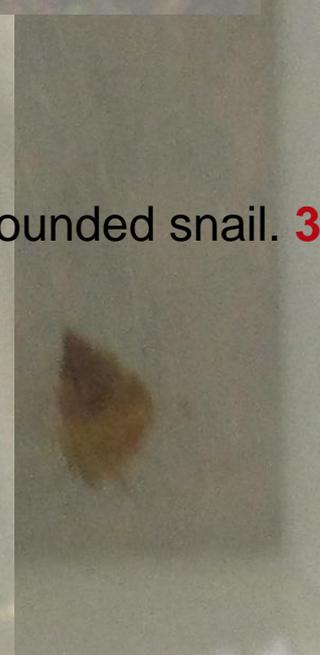
Probably a free-living caddisfly – though it's hard to tell as it's so small. **5**



Koura, or freshwater crayfish. **5**



Another dragonfly. **6**



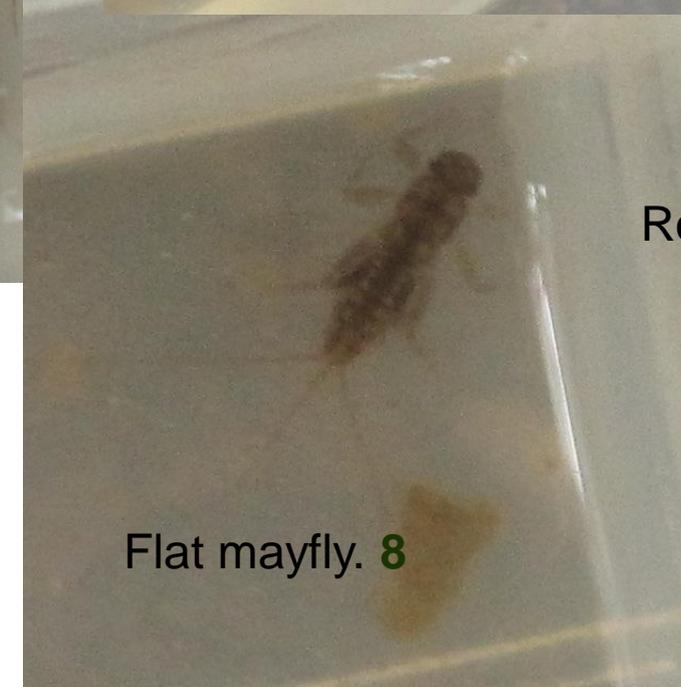
Rounded snail. **3**



Backswimmer. **5**



Pond skaters. **5**



Flat mayfly. **8**



The water temperature here is still about 9 degrees Celsius – cooler than the unshaded water at the first site.

The clarity tube tells gives us a reading of 65 to 70 centimetres, which is a really good clarity.



A small waterfall at the upstream boundary of our investigation site helps to keep the stream well-oxygenated. This is an important feature of a healthy stream.

We measure the flow by floating a small plastic scoop down the stream and timing how long it takes to go 10 metres. It takes 16 seconds so $10 \div 16$ equals 0.625. This is the flow rate, or velocity, in metres per second. As a flow rate between 0.3 and 0.7 m/sec is best for stream life we can say that this is another healthy feature of this habitat.



We also found this cool amphipod, which is a crustacean (like the koura) not an insect. Can you see how many legs it has?

Our class is really good at catching bully fish with the scoop nets...



...and koura!



When we finished, all the critters were carefully returned to the stream



There is really good biodiversity in the stream and we think it is pretty healthy. Mr Alexander, the college farm teacher thinks it could be even better if the stream area was fenced to keep out stock. Maybe we will be able to help plant some native trees along the stream when the area is fenced!

