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An Invasion of Yellow Crazies



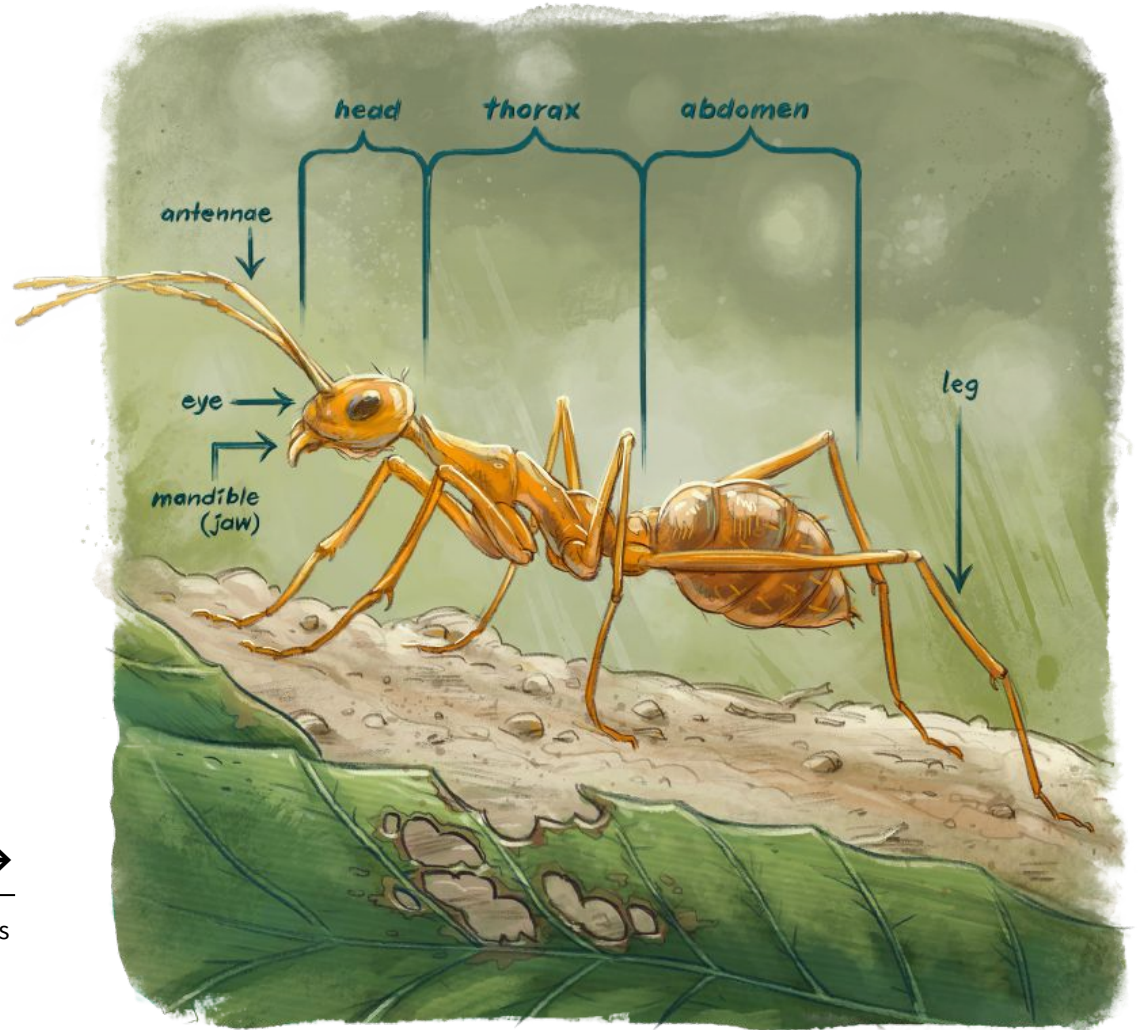
By Allan Burne

The people of Tokelau have a big problem with some little ants. These tiny creatures ruin their crops, eat their wildlife, and make it difficult for people to eat or sleep. So they called in scientists to help with the problem.

Yellow crazy ants

Yellow crazy ants got their name from their colour and their quick and **erratic** way of moving. They are yellow or brownish and have skinny bodies and long legs, and they are around 5 millimetres long. This makes them quite big for an ant.

Scientists are not sure where these ants first came from, but they know that they are good travellers because they have spread through Africa, Central and South America, Asia, and countries across the Pacific. They hitchhike their way over oceans, hiding in the food, machinery, and building supplies that are shipped around the world.



An ant's body parts

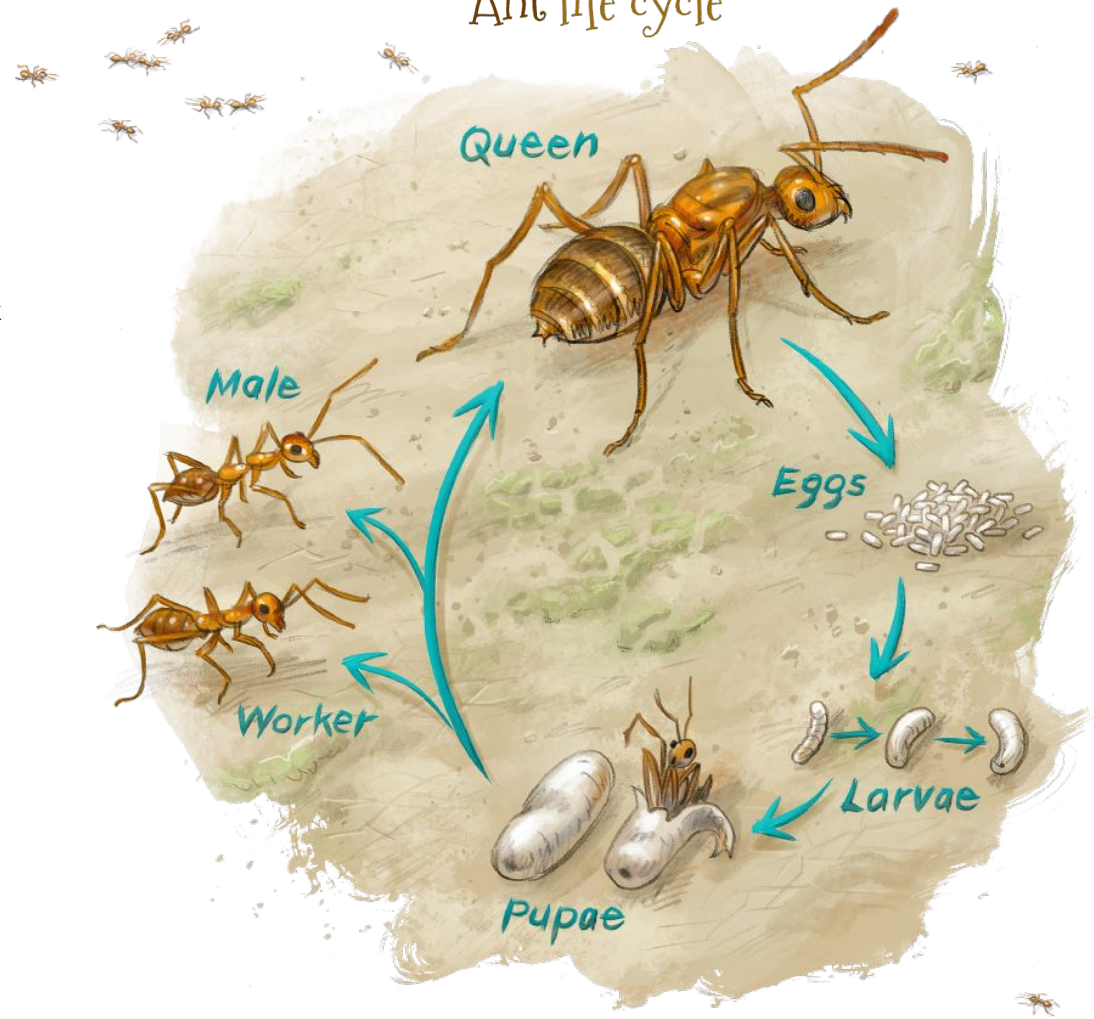


Invasive species

The yellow crazy ant is one of the most invasive species on Earth. Invasive species move from their natural **habitat** to new habitats and damage the **ecosystems** of their new habitats. Yellow crazy ants are very successful invaders because they don't attack each other. Instead, their nests can form huge **supercolonies** where many queen ants and thousands of workers live and work together.



Ant life cycle



A big problem on small islands

On Tokelau, the population of yellow crazy ants has grown so large that they do great damage to the natural environment:

- They protect pests like aphids and scale insects. The ants keep them for their sugary honeydew, which the ants like to eat. These pests damage plants and spread plant diseases.
- They eat young birds, crabs, lizards, and other wildlife. Ant supercolonies need lots of food.
- They get into people's houses and crawl over children and adults, day and night. They crawl into food supplies, machines, beds, and clean laundry. They don't bite, but when they are disturbed, they spray an acid, which can **irritate** people's eyes, throats, and skin.

Science to the rescue

When the scientists arrived, their first job was to learn more about the yellow crazy ants on Tokelau. The scientists needed to find out how far the yellow crazy ants had spread, how many there were, and where their nests might be.

They gathered data by collecting samples and carrying out surveys.



Gathering data

Lures

One way that scientists gathered data about the yellow crazy ants was by using special traps called lures.

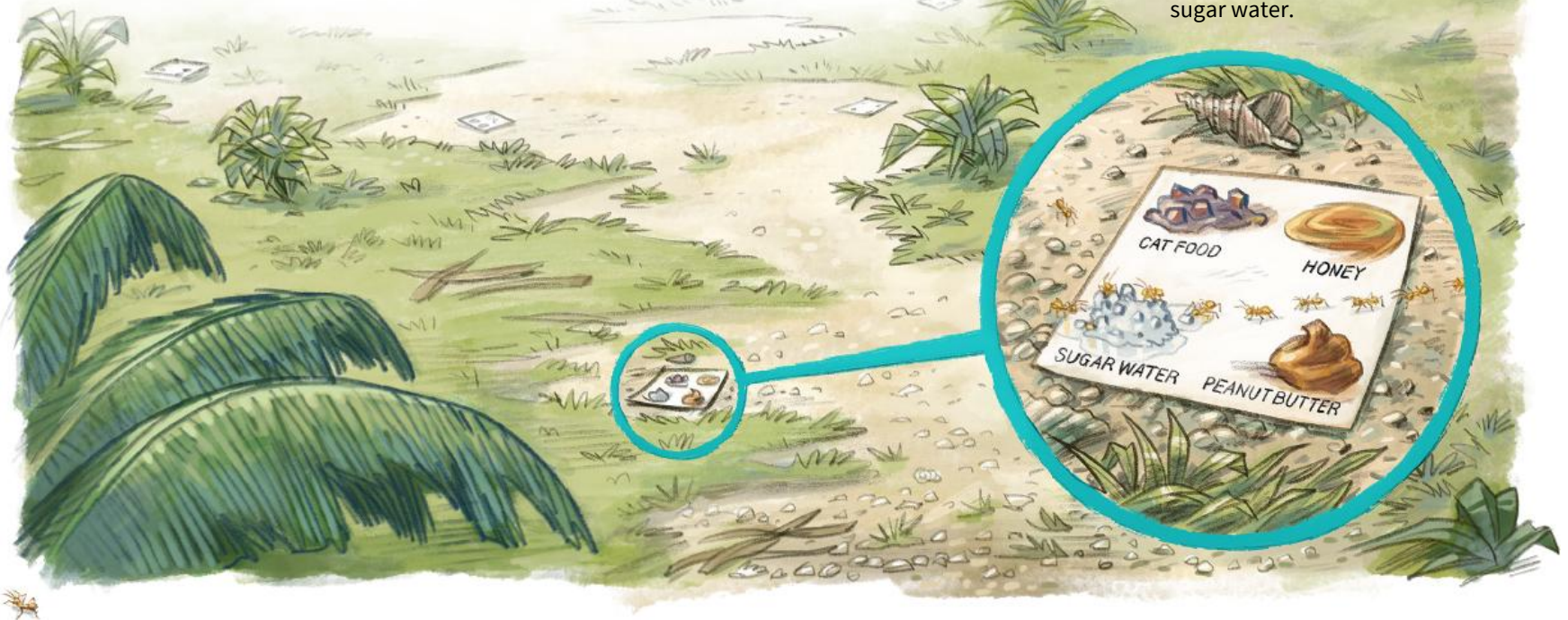
The scientists placed small amounts of sugar water, peanut butter, honey, and cat food on cards on the ground to attract the ants. This helped them to work out where the ants were living.

They marked these places on a map to show where the greatest numbers of ants lived.

It was also a good way to find out which food the ants preferred. This meant the scientists could use the ants' preferred food as bait if they decided to use poison to kill the ants.



These ants prefer sugar water.



Pitfall traps

Another way that scientists collected data about the yellow crazy ants was by using pitfall traps.

The scientists used these traps to capture ants so that they could identify and count them. They filled plastic cups with soapy water or a **preservative**, dug holes in the ground, and placed the cups in the holes. Ants fell into the traps when they were looking for food. The preservative stopped the dead ants from rotting so that the scientists could identify and count them.

Many other insects, including other species of ants, live on Tokelau. So the pitfall traps didn't just catch yellow crazy ants. The scientists used microscopes to identify the ants they caught and a table with tally marks to record what they found. This information provided evidence of where the yellow crazy ants lived, and the tally marks showed which place had the most ants.



A pitfall trap

Number of each ant species captured in pitfall traps

Location	Yellow crazy ants	African big headed ants	Ghost ants	Pharaoh ants
Trap 1	### ###			
Trap 2				
Trap 3				
Trap 4				
Trap 5		###	###	



Card counts

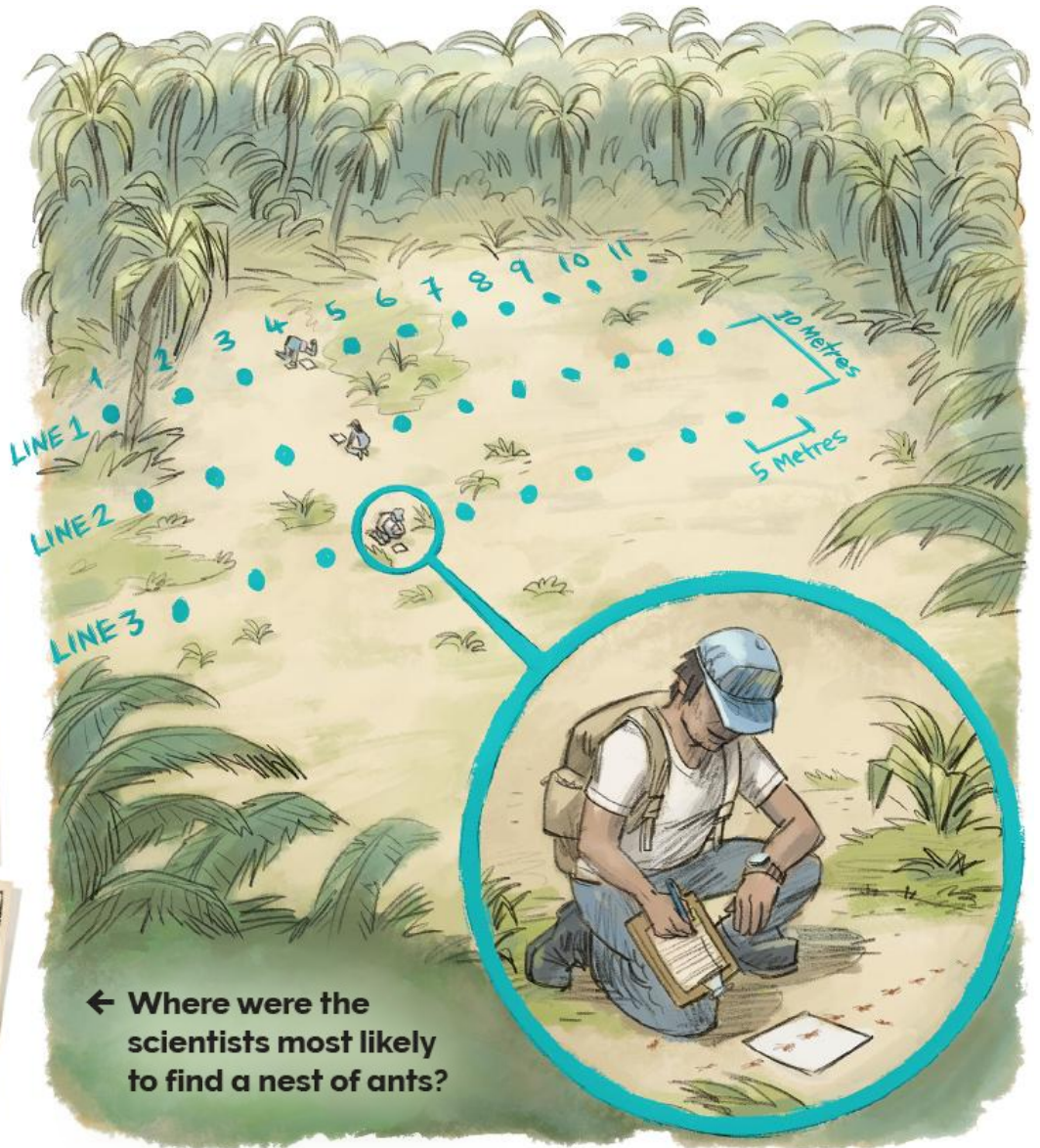
Card counts were another way the scientists estimated the number of ants. They placed a white card on the ground, and counted the number of ants crossing the card over a 30-second period. The scientists repeated these counts many times before they moved to the next location and started the process again. The data showed them the places with the most ants.

Number of ants crossing the card in 30 seconds

Count number	Line 1 tallies
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Count number	Line 2 tallies
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Count number	Line 3 tallies
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	



← Where were the scientists most likely to find a nest of ants?

What next?

The scientists analysed the data to estimate how many ants there were and where the ants were living. They used this information to decide the best way to manage the yellow crazy ant problem on Tokelau. Their options for managing the yellow crazy ants were:

1. **Eradication** – killing all the ants with **pesticide**
2. **Control** – reducing the ant population with pesticide so that they are not as destructive and are less of a nuisance
3. **Containment** – stopping the ants from spreading by making sure there are no yellow crazy ants on anything that is moved out of the **infested** area
4. **Monitoring** – regularly collecting data on the ants in places where there aren't as many of them and where they aren't causing big problems. If the data shows the ant population is increasing they could then be eradicated, controlled, or contained.



Based on their analysis of the data, the scientists decided the best way to manage the yellow crazy ants on Tokelau was to control their numbers by using pesticide.

Fewer yellow crazy ants would mean fewer problems for the people of Tokelau.

The scientists and the people of Tokelau will also continue to monitor the ants. If the yellow crazy ant population increases again, more action may need to be taken.

Tokelau's yellow crazy ants are now under watch. These little ants will be stopped in their tracks if they cause problems in the future.

Glossary

ecosystem – a community of living things and their environment

erratic – random

habitat – the home or surroundings of living things

infested – being overrun by something

irritate – to make sore or painful

pesticide – a substance that kills insects or other pests

preservative – a substance that stops something rotting

supercolonies – large groups of ant nests where the ants work alongside each other

Pacific Biosecurity scientists are funded by the New Zealand Aid Programme. The New Zealand Aid Programme delivers New Zealand's official support for developing countries. The programme develops prosperity and stability sustainably in the Pacific and beyond, using the best of New Zealand's knowledge and skills.

Acknowledgments

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