New Zealand BioSecure

BORDER HEALTH NEWSLETTER

MAY 2025

NAU MAI, HAERE MAI - WELCOME!

Kia ora koutou katoa,

As the days grow shorter and the temperatures continue to drop, the chill of the season is settling in. Winter is just around the corner, and we hope everyone is staying warm and safe. Hope you get the chance to settle into a comfy spot after a hard day's work and enjoy reading this newsletter. We hope you all had a great Star Wars Day.

In the news this month, read about the heavy impact of malaria and WHO's effort in the global elimination of the parasite. Discover a new treatment for lymphatic filariasis and river blindness with an antiparasitic drug: moxidectin. Finally, read about how the first detections of West Nile virus in the UK being theorised to be driven by climate change.

Congratulations to everyone who had a crack at the data entry quiz in the months of March and April, everyone did really well, though there were a few tricky questions! Have a look below for some reminders relating to the most common mistakes and take your data entry to the next level.

Happy reading!

SURVEILLANCE

During May 1311 samples were collected by staff from 12 NPHUs (Figure 1). The samples included 99 positive larval samples and 74 positive adult samples, leading to a total of 3157 larvae and 237 adults identified over the past month (Table 1).

Aedes notoscriptus is the dominant larval species this month, which is different to the previous month and this month last year where Culex quinquefasciatus was the dominant larval species (Table 1).

In total, eight mosquito species have been collected this month (Table 1), that is the same number as collected last month.

Compared to this same month last year, the total number of larvae have decreased (50%) and the total number of adults have shown an increase (1%) (Table 1).

Compared to the previous month, mosquito larval and adult numbers have shown a decrease (65% and 45% respectively).

Table 1. Adult and larvae sampled by the New Zealand surveillance program during June 2024 & 2025

Species (common name)	Adults		Larvae	
	May 25	May 24	May 25	May 24
Aedes antipodeus (winter mosquito)	1	-	-	-
Ae notoscriptus (striped mosquito)	17	38	1455	2001
Culex asteliae (no common name)	-	-	3	-
Cx pervigilans (vigilant mosquito)	6	6	237	660
Cx quinquefasciatus (southern house mosquito)	173	180	1203	3571
Culex sp.	40	8	149	-
Opifex fuscus (rock pool mosquito)	-	1	110	34
Total	**237**	**233**	**3157**	**6266**

The highest number of larvae sampled this month was obtained in Northland (1988 larvae) followed by Taranaki (464 larvae) (Figure 1).

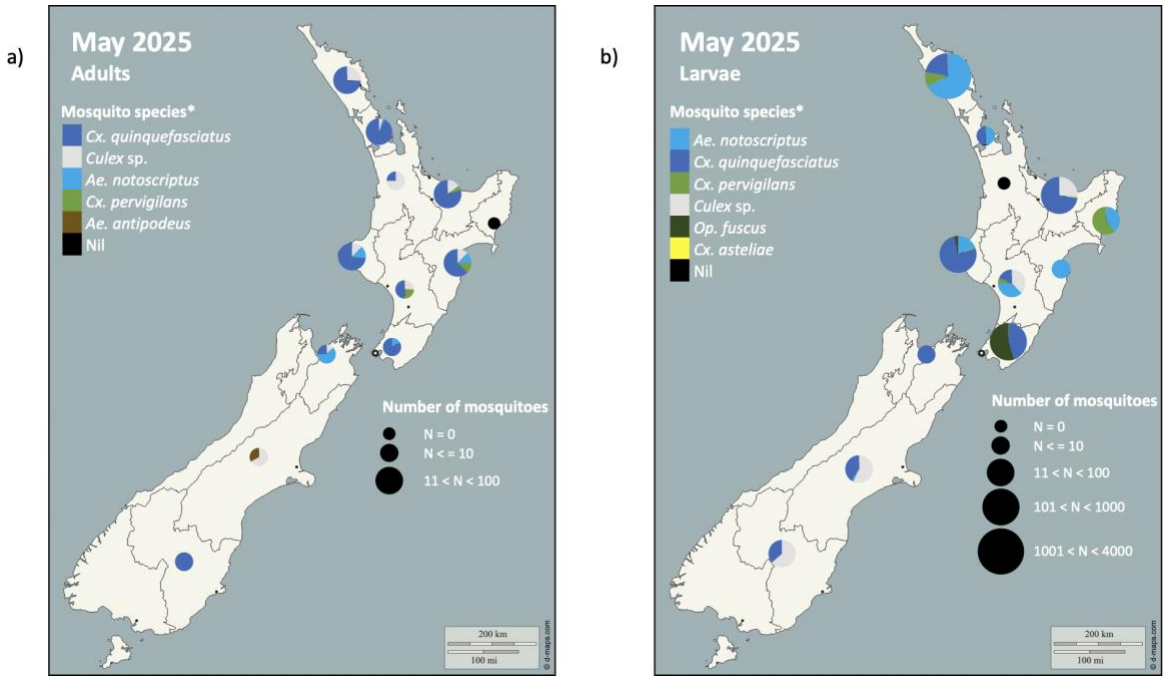


Figure 1. Total mosquito adults (a) and larvae (b) sampled in New Zealand during May 2025 surveillance period.
Please note that the markers represent the NPHUs and not the specific sites where the samples have been taken.
* The mosquito species are listed in order from the most abundant to the least abundant.
The *Culex pipiens* sp and *Culex* sp showing mixed features are included under *Culex* sp. Together with the mosquitoes that are damaged and cannot be identified to the species level.

Aedes notoscriptus larval numbers have shown an increase in six NPHUs and a decrease in three NPHUs and remained the same in three NPHUs compared to the same month last year (Figure 2).

Aedes notoscriptus was not recorded in Southland in May of this year or last year (Figure 2).

Culex quinquefasciatus larval numbers have shown an increase in three NPHUs, a decrease in eight NPHUs, and remained the same in one NPHUs compared to the same month last year (Figure 2).

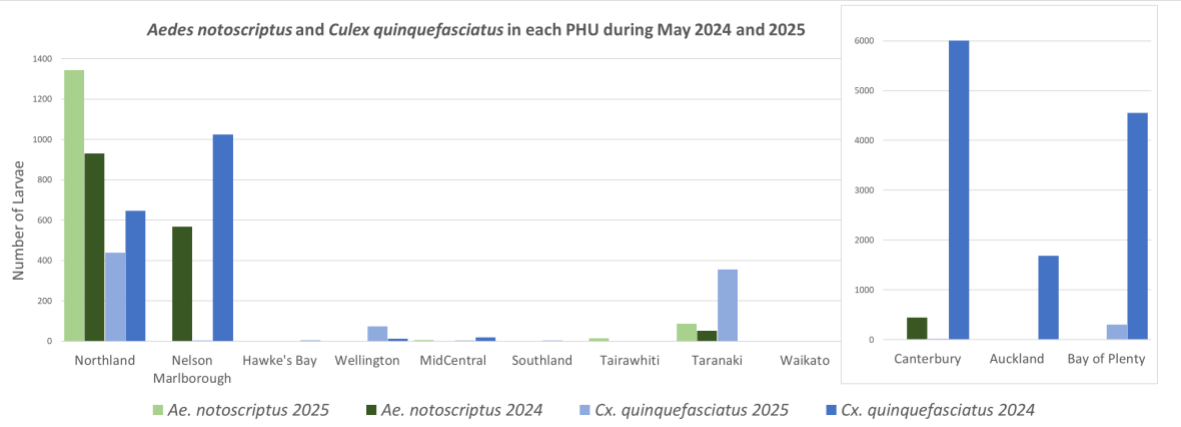


Figure 2. Comparison between introduced mosquito species sampled in each NPHU during May 2024 and 2025. *Please note the different scale for the number of larvae present in Canterbury, Auckland and Bay of Plenty in comparison to the other NPHUs.

INCURSIONS AND INTERCEPTIONS

During May, HPOs responded to two suspected interceptions (Table 2).

Table 2. Suspected interception during May 2025

Date	Species	Location	Circumstances
02.05.2025	1 Female *Culex quinquefasciatus*	The Warehouse South Island Distribution Centre, Rolleston	Found dead in a container of low-risk goods (plastic containers) from China about halfway through unloading. Container had arrived on vessel ANL Waikato which arrived in Christchurch on 15/04/2025 and hadn't been fumigated as the goods were low risk.
16.05.2025	1 Female *Culex pipiens*, likely *pallens*	Ports of Auckland	Found dead in front passenger seat in a used car (Toyota Corolla) imported from Japan on the vessel Dream Jasmine, which berthed at POAL 16/05/2025. Car was heat treated and cleaned prior to departure from Osaka on 03/05/25. Valid SSCEC.

CULEX PIPIENS AND MIXED FEATURES UPDATES

During May, further *Culex pipiens* sp. and *Culex* sp. showing mixed features were detected in 11 Points of Entry. In total 168 mosquitoes were collected, including 148 larvae and 20 adults (Table 3).

Table 3. *Culex pipiens* sp. and *Culex* sp. showing mixed features detected during May 2025

May 2025	*Culex* sp. *pipiens* or showing mixed features - Larvae	*Culex* sp. mixed features - Male	*Culex* sp. mixed features - Female	*Culex* pipiens sp. - Male	*Culex* pipiens sp. - Female	Sum
Northland						
Kerikeri Airport			2	1	1	**4**
Marsden Point			3		2	**5**
Auckland						
Auckland Port					1	**1**
Bay of Plenty						
Tauranga Port	111	1				**112**
Waikato						
Hamilton Airport					3	**3**
Taranaki						
Port Taranaki					1	**1**
Hawke's Bay						
Hawkes Bay Airport				1		**1**
MidCentral						
RNZAF Ohakea	6					**6**
Nelson Marlborough						
Nelson Port					1	**1**
Canterbury						
Timaru Port	24	0	0	0	3	**27**
Canterbury						
Queenstown Airport	7					**7**
Total	**148**	**1**	**5**	**2**	**12**	**168**

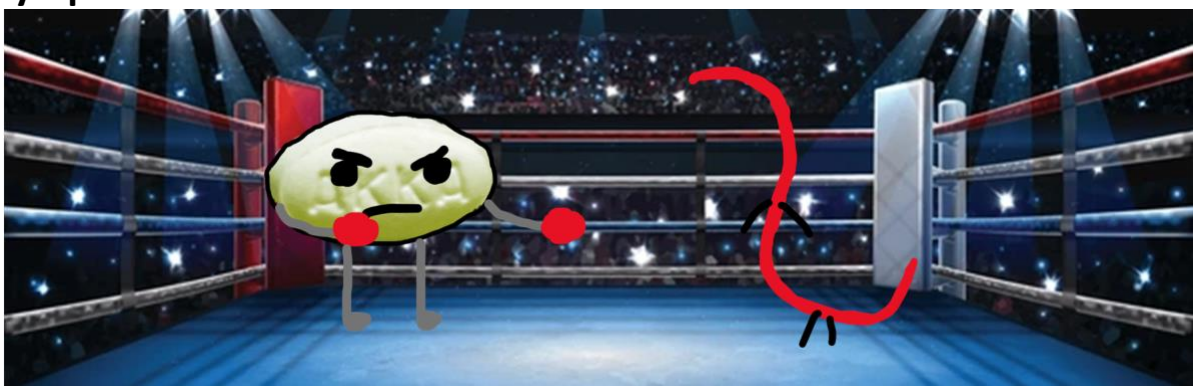
NEWS ARTICLES FROM AROUND THE WORLD

Reinvest, reimagine, reignite: WHO calls for unified action to end malaria

On World Malaria Day 2025, the World Health Organization (WHO) urged renewed global and local efforts to eliminate malaria, highlighting both the progress made and the ongoing challenges. Since 2000, over 2 billion malaria cases and nearly 13 million deaths have been prevented, and 45 countries and 1 territory have been certified malaria-free. However, the

disease remains a serious threat, especially in Africa, which bears 95% of the global burden. Gains are threatened by fragile health systems, drug and insecticide resistance, climate change, and funding shortfalls. WHO emphasized the importance of political commitment, domestic investment, innovative tools, and community engagement to sustain progress. Initiatives like the introduction of malaria vaccines in Africa and expanded use of advanced mosquito nets offer hope, while declarations like the Yaoundé Declaration reflect growing national leadership. Under the theme "Malaria ends with us: reinvest, reimagine, reignite," WHO calls for unified action to defeat malaria once and for all. Read the Yaoundé Declaration here. Discover the full article here.

Moxidectin emerges as a game-changer in the fight against lymphatic filariasis



A small clinical trial in Côte d'Ivoire led by Washington University researchers has found that the anti-parasitic drug moxidectin, currently approved for treating river blindness, is more effective than ivermectin—the current standard—for combating lymphatic filariasis, a debilitating disease affecting tens of millions across Africa. Moxidectin showed superior efficacy in clearing infections and maintained its effect for longer periods, potentially reducing the number of treatments needed and helping to accelerate disease elimination, especially in hard-to-reach populations. Since lymphatic filariasis and river blindness are often co-endemic, moxidectin's effectiveness against both conditions position it as a promising tool for mass drug administration programs. The study's results, published in *The Lancet Infectious Diseases*, suggest that moxidectin could significantly shorten the timeline for eradicating lymphatic filariasis, offering hope to the hundreds of millions still at risk. Read the full article here or read the clinical trial report here.

Innovative drug-coated bed nets show promise in stopping malaria at the source

Southwest Research Institute, in collaboration with researchers at Harvard, Oregon Health & Science University and Portland Veterans Affairs Medical Center, developed two prototypes of antimalarial bed nets infused with Endochin-like Quinolones (ELQs), designed to kill *Plasmodium* parasites within mosquitoes upon contact. Published in *Nature*, the study shows that these novel drug-delivering nets, which work by the mosquito absorbing ELQs through its legs, offer a promising new strategy to combat malaria at the source and reduce

resistance issues associated with traditional insecticides that usually target the vector (*Anopheles* mosquitoes). Read more here or discover the scientific article here.

Invisible invaders: How malaria parasites evade the immune system

Researchers at Weill Cornell Medicine have uncovered a key survival tactic used by the malaria-causing parasite *Plasmodium falciparum*—the ability to shut down a crucial set of genes, rendering it "immunologically invisible". The malaria parasite evades the immune system by switching between about 60 *var* genes that produce surface proteins, allowing infected red blood cells to stick to vessel walls and avoid spleen filtration, thereby prolonging infection through continuous immune escape and enabling it to persist undetected in the human body for years. Published in *Nature Microbiology*, the study reveals that some parasites enter a “null state,” expressing no *var* genes at all. This surprising stealth mode allows them to evade immune detection without clinging to blood vessel walls, likely by hiding in the bone marrow or spleen. These findings challenge current malaria eradication strategies focused mainly on symptomatic individuals and highlight the complexity of addressing asymptomatic carriers in endemic regions. The research could lead to new approaches in tackling chronic malaria infections and accelerating elimination efforts. Discover the full article here or read the scientific article here.

First detection of West Nile virus in UK mosquitoes signals rising threat from vector-borne diseases

For the first time, fragments of West Nile Virus (WNV) have been detected in mosquitoes in the UK, signalling the virus’s northward spread likely driven by climate change, migratory birds, and favourable conditions for mosquito vectors. While the risk to humans remains very low and no local infections have been reported, experts emphasize the importance of ongoing mosquito surveillance and preparedness as vector-borne diseases such as WNV, dengue, and others expand into new regions due to environmental and global changes. Read more here.

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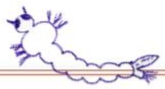
A BITE OF INFORMATION – QUIZ ANSWERS



There are six options for entering traps:
- BG Trap - Adult
- GAT Trap - Adult
- CO2 Baited Light Trap
- Tyre Trap
- Not a Trap
- UV Sticky Trap - Adult

After an interception you would use the following in the response:
- Any survey done should be entered under the "Reason for Sampling" as "Delimiting Survey"
- Any traps that are deployed as enhanced surveillance should have the "Reason for Sampling" as "Enhanced Surveillance"

Only the interception/suspected interception itself should have this as the "Reason for Sampling"

The "Habitat Category" for a trap is always "Trap Option"

The "Habitat Category for a sump is "Subterranean Habitat- Artificial"

Sites that are not traps (even if they are routine sites), do not need to have trap nights

RISK MAPS

Dengue Map – Centres for Disease Control and Prevention
Zika Map – Centres for Disease Control and Prevention
Malaria – Centres for Disease Control and Prevention
Malaria – World Health Organisation

DISEASE OUTBREAKS

To find out where the latest disease outbreaks have occurred visit:

Epidemic and emerging disease alerts in the Pacific region - Produced by the Pacific Community (SPC) for the Pacific Public Health Surveillance Network (PPHSN).

Disease Outbreak News - World Health Organization.

Communicable disease threats report - European Centre for Disease Prevention and Control